Hospital Progress

Vol. IX SEPTEMBER, 1928 No. 9

The Staff's Responsibility For Technic[1]

Rev. Alphonse M. Schwitalla, S.J.

THE problem of the staff's responsibility for hospital routine involves, it seems to me, questions of a fundamental nature in hospital administration; questions, too, which mark the change of attitude in regard to hospitalization. The hospital of old was simply a place in which the sick were taken care of. The hospital of today is still a place for therapeusis but, besides this, it is even more, a prophylactic agent, a diagnostic laboratory, a school, a center of influence for public-health activity. As the new functions of the newer medicine have made themselves increasingly prominent in the evolutionary processes, these new functions have gradually been centralized in the hospital, particularly in those locations where the absence of a school of medicine and perhaps even an active department of health have more or less forced the hospital to undertake numerous responsibilities.

The Diagnostic Routine

The term "Hospital Routine" means different things in different places. To clarify our purpose in this paper it is necessary to note that we are not concerned here with administrative routine nor with dietary routine nor with nursing routine nor with operative routine but rather with that basic routine which enables the hospital first of all to recognize the extent of its own responsibility to the individual patient, then to meet that responsibility by proper procedures and finally, to carry through, by means of a well-established and ethical follow-up system, its further responsibility to the patient after he has left the institution. In general, therefore, we are talking about the hospital routine which implies a clear and adequate recognition of the patient's condition on his entry into the hospital and which might, therefore be well spoken of as the "Diagnostic Routine."

The Need of Routine

The first question which arises in connection with such routine is this: Is there really a need for it? The answer must be unequivocally—yes. Each hospital for its own professional standards must insist on some kind of routine. The hospital must no longer take the attitude that the physician is solely responsible for the patient. It can no longer be content with the physician's diagnosis and regard this as the sole measure of its obligations to the patient. Modern medicine has for a considerable period of years recognized the fact that obscure diseases may complicate a hurried diagnosis made in a physician's office. It has recognized the fact that a patient may be seemingly cured of a certain ailment and may, therefore, be dismissed from a hospital only to come back within a short period with a condition that is worse than the one for which he has just been treated. The prophylactic medicine of today lays stress upon physical examinations as basic to all medical attention and this attitude is rapidly reaching forward into the detection of progressively earlier stages in the development of disease with the hope of interfering with what might be called the embryonic stages of such a disease. The hospital, by its insistence upon a thorough physical examination, thereby becomes the most potent agent in the development of present-day prophylactic medicine.

Advancing Medical Knowledge

Moreover, the hospital is becoming a depository of medical knowledge. A history is of no value as a source of medical knowledge, unless it includes such facts as are elicited by an adequate physical examination. We may raise the question, What constitutes an adequate physical examination? but whatever answer we find to this question, this much seems to be certain, that a physical examination is more than a cursory inspection of such anatomical and physiological findings as have already obtruded themselves upon the patient's consciousness through pain manifestations or such as force themselves upon the physician's attention through the ordinary superficial criteria of disease. We are insisting upon the early recognition of cancer, upon the comparative safety of cancer, of tuberculosis, of syphilis, of various kinds of tumors, and we know that in that early recognition there lies an increasing hope for the ultimate safety of the patient. Many of these conditions are altogether unknown to the patient. In our clinics it happens frequently that a maxillary tumor is discovered in the course of a routine X-ray tooth examination and similar instances could be multiplied indefinitely. Anyone of these conditions, as we know,

[1]Read at the 13th annual convention and 2nd annual clinical congress of the Catholic Hospital Association at Cincinnati, Ohio, June 18-22, 1928.

Father Schwitalla is dean of the St. Louis University School of Medicine, St. Louis, Mo., and the new president of the Catholic Hospital Association.

can fundamentally and profoundly affect the picture of almost any disease and an adequate study of every patient is, therefore, dictated by the commonest of sense when such a study is at all feasible within the limitation of equipment and available time. As soon as a patient enters the hospital the institution becomes the guardian of his health and at the same time it must develop a sense of responsibility for the professional integrity of the men who are allowed to practice in it.

The Staff's Responsibility

The question that interests us is this: What share in the hospital's responsibility must the staff carry? To answer this we must first of all review the different kinds of relationships existing between the hospital and the staff. We have certain fairly clearly defined types of institutions in our country and in accordance with the type the staff's responsibility must vary.

The open hospital is the hospital in which any reputable physician in a given locality is allowed to practice. The standard of reputability is variously fixed. Sometimes it is membership in the local medical society; at others it is the personal acquaintanceship of the hospital authorities with a certain physician; at others it is a more or less arbitrary standard determined by the character of the school from which a given physician graduated or by his local standing or by his civic standing; but whatever the standard of reputability is, the open hospital extends the privileges of hospitalization to such physicians.

More or less opposite to this, we have the closed hospital; again an elastic term which means different things in different situations. Any hospital whose privileges are reserved to a definite selected group, the staff members of a school of medicine, for example, may be called a closed hospital. The group may be confined to a selected list of physicians in a certain locality, who, by right of ownership or for some other reason, have helped in the creation of hospital facilities.

Between these two extremes we have intergrades. It is clear that in the closed hospital the degree of responsibility of the staff for adequate nursing and medical care is potentially greater than it is in the open hospital. Responsibility does not exist in reality even though it exists in name, unless responsibility can be fixed upon a responsible person or persons and, therefore, everything else being equal, some form of closed hospital can better serve the community's needs than can a hospital with a more or less open staff.

It may be said, therefore, that in a closed hospital the responsibility for an adequate hospital routine can be made to rest entirely upon the staff organization. Since in such a hospital, generally speaking, the standards of professional service are high, since the caliber of the men themselves is, generally speaking, superior, and, finally, since the form of organization of such a hospital lends itself more readily to the enforcement of sanctions and professional restrictions, the staff can easily impose upon itself the carrying out of a diagnostic routine.

Unless the mechanism for such a routine has been carefully worked out, its practical execution becomes a matter of constant watchfulness. The more perfect the organization, moreover, the more readily and efficiently can the routine be carried out. In such a hospital, the staff responsibility presents no great problem for the staff members themselves will find in the routine an adequate safeguard for their professional standing and their personal honor.

The problem presented in this respect by the open hospital is much more serious. The open hospital also has its staff organization but all too frequently the election of the chief of staff and his immediate entour-

FOUNDLING HOSPITAL AT GUADALUPE, MEXICO

age becomes a matter of local politics and of influences that are not always a credit to the medical profession. Yet, this much can surely be said, that one of the greatest safeguards for institutional integrity in an open hospital is the enforcement of a basic hospital routine. If the hospital must be open the good will and sincerity of the staff members can be well tested by their voluntary and wholehearted submission to the demands of an institution which is trying to give the best feasible service to its patrons. In fact it might well be that submission to a diagnostic routine could readily be made a criterion to eligibility to practice and thus an institution, without relinquishing its claim to being an open hospital, can participate in no small degree in the advantages, the safeguards, and protective restrictions which are the greatest benefits of a closed hospital.

Enforcing Routine

The question of the sanction of a basic routine presents problems of no small magnitude, all of which, however, are probably extrinsic to the fundamental purpose of hospitalization. If the good of the patient alone is considered, basic routine in a hospital is open to no question. If, however, the relation of the hospital to the physician is considered, a matter clearly extraneous to the care of the sick, numerous problems may present themselves. Thus, for instance, the question arises: Shall a physician be excluded from practice because he will not submit himself to the basic routine of a hospital? The answer on the face of it would be unquestionably—yes. Yet, when such a physician has a large following, when he himself is responsible for a large number of hospitalized patients, it may well be that the administrative officers of the hospital will hesitate about enforcing a rule, which in their own hearts they know is for the good of the institution. Similarly it may be asked: If a physician is accustomed to making the usual examinations in the course of his diagnostic practice, shall the hospital insist upon a repetition of these procedures when the physician sends his patient to the institution? Again the question should be answered, unqualified—yes— if you consider the patient himself. Practically speaking, any number of difficulties may here arise, especially when consultants are called in or when a certain physician refuses to transfer his records or a copy of them to the hospital. With all of these problems the staff must cope and clearly recognized responsibility will make it necessary at times to develop the diplomatic complications that should be solved, not on the basis of expediency, but on a basis of established principle, for it is only in this way that the health of the patient and of the community can be adequately safeguarded.

Varying Details

This is hardly the place to go into details of the nature of this basic routine. There are certain things that are clearly outstanding. No one would quarrel with the necessity of a urinalysis or a blood count in the case of every patient who enters the institution, even for those who submit themselves to what we have been accustomed to calling minor operations. We might, however, call seriously into question the necessity or even the desirability of an X-ray chest plate in the case of all medical patients. Ideals of service should here dictate the staff's policy. The insistence should be rather upon how much can be enforced than upon how little must be enforced. The social and economical status of the hospital patronage may have a considerable bearing upon these problems but if the staff of the hospital is imbued with modern and well-recognized ideals the difficulties will probably entirely vanish in view of the unquestioned good which results. The routine should, therefore, be somewhat elastic. What must be insisted upon in one place cannot be insisted upon in another and what is serviceable at one period in the hospital's history may have to be modified at another. New institutions sometimes claim that in the beginning their organization should be more or less open until they have been assured of an adequate patronage for their institution. Then as time goes on more rigid enforcement becomes increasingly easier. The philosophy underlying this is probably profoundly fallacious. A new institution should declare from the very beginning its unqualified adherence to the highest obtainable ideals of service and, no matter what the financial strain, the hospital cannot afford at any time to sacrifice a sensible and practical idealism to expediency. From the very beginning, therefore, of the new instiution's life, the requirements for the admission of a certain patient should be insisted upon by the newly organized staff.

The staff, moreover, has the further responsibility of keeping its hospital practice up to date by insisting upon such new procedures as may from time to time be developed through scientific research. Gall-bladder visualization, electrocardiographic tracings, and similar procedures might well become required features of a hospital routine as facilities develop and the diagnostic value of these findings becomes better established. It is here again that an up-to-date staff will assume responsibilities that will make for greater sureness in the care given to a patient.

Cost to the Patient

The economic question is bound to arise and the conflict between hospital administrators and staff members in their respective view points might easily become accentuated.

The hospital is interested, generally speaking, in restricting the expenses of the patients in the hospital to the cost of board and lodging and necessary medical assistance. The staff, on the other hand, is inclined to overlook expenses to the patients and to seek ways and means for adequate medical study. This conflict is as old as the hospitals themselves but many institutions have solved the question to their own satisfaction as well as to the satisfaction of the staff. The flat rate, differing in different localities, is probably more easily enforced for such ordinary routine features as fall within the approval of the generality of physicians. For special procedures in certain types of cases an additional charge might well be made. Generally speaking, when a patient is told about the value of an additional expense very little opposition to the demand of such fees develops. The patient's great difficulty is in sending the utility to himself of a deeper insight into a given case on the part of the physician. This situation promises to be bettered as time goes on and as the public becomes better instructed in the intricacies of modern medicine. Instances may be multiplied of the deliberate choice on the part of the patients for increased expenses even in the case of those of moderate means.

Nor need the question of the increasing cost of hospitalization be discussed here. This much seems certain, that the cost of hospitalization has not increased more rapidly than the general cost of living, in fact, there are many who suspect that the cost of hospitalization should be increased rather than decreased and that such a raise in costs would meet with little opposition if only the medical profession itself could be made more completely aware of its responsibilities in meeting the economic stress of this or that individual patient.

Facilities Necessary

Just a word about facilities for the enforcement of a hospital routine. The day has passed when we build a hospital without adequate provision for a laboratory. The latter is now regarded as one of the indispensible features in every institution. And yet, it may be said that builders of hospitals are more inclined to overstock than to understock the laboratory. Money is spent upon equipment which gathers dust and seems to have been purchased rather for the purpose of impressing the casual visitor than for the purpose of actual use. A halt should be called upon this ill-advised purchasing. Hospital administrators would lend a more ready ear to pleas for necessary hospital equipment if staff members were to bear in mind the difficulties of obtaining funds, particularly in some localities. We are familiar with small hospitals in which costly physical-therapy equipment has been installed on the advice of some temporary enthusiast, who toyed with his machinery for a brief month or two only to discard it himself or to leave it to be discarded by his successor. Funds of this kind if employed for the purpose of developing a conservative, well-planned, and efficient hospital routine, would surely have been put to better use. Hospitals are not show places for equipment and any piece of equipment which is not serving the primary purposes of the hospital might well be excluded from an institution which has so serious an aim.

Relations of Visiting and Consultant Staffs

Finally, the question of the relation between the visiting and consultant staff of the hospital in relation to the enforcement of basic routine might be briefly touched upon.

The regular visiting staff of a hospital, if properly organized and selected, always have a voice in the eligibility of consultants in an institution. If consultants are admitted whose professional standing and ideals are less exacting than those of the regular staff, it will not be long before the general tone of the institution is lowered, and the wedge will have been introduced for a loosening of those relationships which are most sacred in a hospital.

As a final conclusion, therefore, I would insist that among the few ways we have for developing the proper recognition of responsibility in the staff for the public service which a hospital can render, the enforcement of a basic routine is perhaps the best and most exacting.

PROVIDENCE HOSPITAL, OAKLAND, CALIF.

The Artistry of Color in the Hospital[1]

Mary Cecilia Stimson, R.N.

WITH the strong, bold strokes of the master of words that he was, Browning once wrote:

"A man's reach must exceed his grasp,
Else what's a heaven for!"

An ideal, by its very nature, points to a perfection never gained, to a completeness unattained. It is a goal to be striven for even though all effort to achieve that goal end only with the striving. It is the vision of those better things that a man in the better moments of his better self can see to do, but which no man yet has done. It is the source of most of the earthly happiness that a fortunate few have sought and gained for the less fortunate many. It affects the large and little things of life, as men may choose to see them large or little, but it is never born of motives mean or small.

Christian Ideals

As is the world at large, so too in the hospital world, ideals have been the motive force in ministering to the misery of mankind. Paganism held suffering a curse. Only the sufferings of the suffering Christ aroused in the minds of men a charity, a sympathy, and a fellow feeling which the pagan world had never known. And so it came to pass that as century followed century, greater and greater efforts were made for the alleviation of human misery in the vastly various forms that blighted a sin-seared world. Through it all and in it all, the ideal that inspired the hand, the head, and the heart of those who ministered to the sick was ever pity for the suffering "little ones" of the suffering Savior. Mercy appeared at every turn. Nothing was vain, nothing was small. A glass of cold water pressed to the fevered lips, a smile that beamed upon other eyes agonized in pain, the touch of a hand that soothed and comforted and bespoke the touch of the understanding heart. All these things were small perhaps, but they were large in the minds and thoughts of the souls whom the finger of disease had touched.

More and more, there walked by the side of charity her sister ingenuity, discovering at every turn newer ways and better ways till the art of healing grew apace, bringing the betterment of medical and nursing skill to high and higher planes. And when all known ways and means seemed exhausted, the ministering angels of the sick went out amid the myriad mysteries of nature to carry back the marvels of God's handiwork to cheer the abode and calm the hearts of those with whose care they had been charged.

Charity and Beauty

Science in its strivings after sanitation had stripped the hospital bare and left it unlovely, unattractive and cold. But not for long. Soon were heard in the land the voices of those who felt that if Charity was beautiful, and it was, it should radiate beauty wherever it went. And the cry was taken up and the word went forth that art was to be introduced into the hospital.

But, alas! for the magical meaning of words!

"For words, like nature, half reveal
And half conceal the soul within."

Into the minds of many there crept a vague notion of what art might mean in a hospital. They understood not and their enthusiasm waned.

It is difficult for many to dissociate art from the idea of picture painting. To them, drawing and painting have been art education. "If a man studied art, expressed art, or loved art," says Frank Alvah Parsons, "it must be through pictures only, and they were expected to belong to the school of realism and naturalism, in which not a thing was left to the imagination of the observer except, perhaps, how long it took to paint them and how much it cost to buy them. To dissociate the art quality from pictures, drawings, statuary, or any one particular medium of expression, is essential to the realization of its quality in any field. Any discussion however simple, of these terms seems to establish the following facts: That art is an essential quality in human life and that it is the expression of a knowledge and feeling for functional fitness and for beauty in every made thing."

There is only a half truth in the old adage "There is no disputing about taste." The axiom merely states the well-known fact that there are many departures from good taste owing to personal peculiarities, uncommon surroundings, and other accidental conditions and circumstances. Taste includes the perceptional and emotional elements. The perceptional element denotes discernment, which is not ordinarily possessed in a high degree nor given to many. Nature is not lavish in gifts for adornment and enjoyment. The emotional element consists in the power of relishing or enjoying the beautiful.

Emotional capacities among men are quite various. Thus there should be a reason for choosing colors for decorative purposes. They should not be chosen simply because they are liked or considered pretty, but because of an inherent value they actually possess for a definite, preconceived purpose.

The Profit of Beauty

Too little attention, perhaps, has been paid in the past to what may be called the profits of beauty in the hospital, as beauty affects the happiness of the patient, the beauty of his surroundings, and actual, practical economy in the administration of the hospital itself. Every nurse, for instance, has heard the repeated warning to "turn out lights when not needed!" and has often been in a dilemma just how to judge and gauge when and in how far the necessity exists. It may mean the

[1]Read at the 13th annual convention and 2nd annual clinical congress of the Catholic Hospital Association at Cincinnati, Ohio, June 18-22, 1928.

Miss Stimson, of the hospital service bureau of the Catholic Hospital Association, organized and managed the clinic on the Profit of Beauty in the Hospital.

saving of a few cents for the hospital, but the hospital in the meantime may have spent thousands of dollars in painting walls and corridors of a tint and hue that invite the shadows to hover and fall and linger on. Everybody knows the effect, physiological and psychological, of shadows and darkness upon a patient. Pennies are saved to make up for the thousands of dollars which have been squandered in a failure to light the dark places. If a free patient can be cared for with the money saved on light bills by the proper tinting demanded by orientation, why should this not be done?

People have been known to exclude yellow because it was popularly supposed to make persons bilious. Gray has been a popular choice and has its place. But misplaced and misapplied, it is like people who absorb, keep everything, give out nothing. It becomes a color we look for in a mist and gloom.

The Flower Garden

Someone has said he would love to spend his convalescent days in a flower garden among the trees where birds were singing. Unfortunately, too few hospitals can boast of trees; few have small lawns and few indeed have any gardens at all. Some of our hospitals are built right on the street as though they grew out of the pavement, and when the nurse steps outside the door she finds herself standing in little clouds of whirling dust upon hard, bare, and unattractive pavements and cobblestones.

But where we have no garden we can endeavor to bring the garden to the sick. The nurse of the new era will transfer the out-of-doors inside by means of scientific training in the knowledge of treatment of walls, the kind of hangings and furnishings in colors and textures. The lovely green of the forest trees, the tender young golden green of the maple, the soothing gray-green of the silver-leaf poplar murmuring and fluttering in the breeze; all of earth's fresh budding woody shades of leafy green that we long and look for in the springtime and which bring renewed life and vigor to men—these she will bring into the hospital.

And then the flowers. The gentle violet hues and orchid shades, the flowers we love—the pale, sweet lilac and the lavender blooming along the rocky garden wall. All of these shades and tints have their place in the hot southwest rooms, and by their gentle presence will catch up the sun's hot, piercing rays and hold them fast, that the tired eyes and fevered brows may be cooled and soothed, because these are the colors that take up and absorb the light and make themselves even more beautiful. And then there are the north rooms, for every building must have four sides. What will our gardens and our nurse do for these dark rooms where the sun does not shine?

Stand beneath the maple or the hickory tree in September or early October, after the first slight frost. Stand there on a cloudy day, on a rainy day, if you will, and see the dark earth glowing with a yellow light. You will look around and think the sky has suddenly cleared, and that the sun is shining, but then you will hear the drop—drop of rain, and you will know that the radiance is just the glow of gold sent out from the yellow leaves, and for a distance around, the light has brightened a gloomy day. You will want to stand there, because yellow is like the sun and because of this is called "light"; and just as light brings cheer into the darkened room, just as it gives life to plant forms, just as its life-giving and cheer-giving qualities are seen in other manifestations, so yellow entering into any color

CLASS OF 1928, SCHOOL OF NURSING, ST. ALEXIS HOSPITAL, CLEVELAND, OHIO

scheme whatever introduces into it the same quality of light, cheer, buoyancy, and life.

It is autumn, as we said, and the oak trees are blazing with orange and brown and russet, all tinged with gold. They make us feel snug and cozy; they remind us of the yellow harvest moon, of the golden pumpkin, of ears of ripened corn heavy husks turned back awaiting to be gathered and stored. They make us think of rosy apples and "Over the hills to grandmother's house." Would not these thoughts bring cheer to the heart of a sick man?

Well, this is all a part of the garden and what the trees and flowers can do. These are the gardens the new nurse will bring into the hospital, for in the north rooms she will bring the glow of light and warmth, as in the south rooms she will subdue the too brilliant rays of the sun. Walls toned yellow, the very furniture made of golden maple; hangings—wool sheared from the gentle angora goat and dyed in the soft coloring of gold through which the light filters as it does through the leaves of the maple and the hickory trees.

The garden has its place in the east room, too, and there the palest tints of the othelia rose in its shading from softest pink to faint old ivory with a heart of gold, just "hinting rosy fingered dawn," and mingled with the dewey bloom of palest columbine would find a welcome.

This is the work and aim of the modern nurse and the modern hospital no less than the giving of baths and medicines. The nurse-executive, for only a nurse can adequately perceive and know these things, provides the patient with what the patient craves, just in the same way she learned from her own cravings the "nicer" things to get to make the patient well.

A Woman's Work

Finally, beauty in the hospital is woman's work. Men have been the architects; men have been called in as interior decorators. But as Crawford says; "Men have stronger arms and heads for harder work, but they have no such hearts as women. And the world has been led by the heart in all ages." It is woman that knows, as no one else, that beauty in the hospital has for the patient an appeal that is personal. It is her perception and sympathetic insight which enables the patient to see the hospital as though it were built, equipped, and manned for him alone. It is because of this understanding that he is grateful to the executives, whose sense of service to the sick is reflected in all that he sees and in all that he sees done in the hospital. Even if he be not an educated man, his natural sensitiveness accentuated by sickness, enables him to discern the necessarily beautiful personality of the individual or of the group of individuals who planned all this beauty as if for him alone. In his own way, he realizes, that, as a man, he has been born of love, that he has been created by the Creator of all beauty, and is himself possessed of an innate craving for beauty, as he understands it, and as he realizes that the hospital has actually provided it for his own sick, sensitive self.

VIEW OF COOK COUNTY HOSPITAL (CHICAGO) FROM THE AIR

Economy in Ward and Room Equipment[1]

Sister Mary Rose, R.N., Mercy Hospital, Pittsburgh, Pa.

THERE is probably no factor that enters more vitally into every hospital problem of design, construction, equipment, or service than the factor of economy. Economic efficiency is the source of success in every enterprise but, to be effective, economy must, above all things, be intelligent.

It must be borne in mind, whether in constructing or furnishing a whole hospital or merely a ward, that this unit is meant to function for a great number of years, and it is highly important that only the materials and equipment that give the longest and best service should be installed in the beginning. Usually the best that can be purchased is, in the end, the most economical. The best, besides keeping down maintenance costs, yields two dividends—a surplus of comfort to the patient, and to the management, the satisfaction of owning the best.

In discussing the economy of ward and room equipment, we shall start with the basic principle that whatever tends to promote the rapid recovery, comfort, and happiness of the patient in the highest degree, is best not alone from the pathological viewpoint but from the economic and from every other viewpoint also. With this in mind we shall speak consecutively of economy in construction, furnishings, personnel, central supply service of food, supplies, dressings, etc., "turnover" of patients, and recreational therapy.

In the construction and furnishings of both wards and rooms, everything should be substantial, durable, plain, yet attractive. Beauty is by no means destructive to asepsis, and if cheerful surroundings help patients to get well quicker, thereby shortening their stay in the hospital, then beauty is a factor in economy that we cannot overlook.

Important Factors

Let us assume that we have two groups of wards—one, medical; the other, surgical—with preferably from four to six beds per ward and so built that an abundance of pure air and sunlight is available for all patients. No ward can get too much sunlight. Are sun porches and solaria in connection with ward groups an economic consideration? Yes. Today, fresh air and sunlight aided by good nursing, rest, and proper diet are recognized as more potent factors in the fight against disease than drugs.

For durability and cleanliness the terrazzo floor and base are best for wards. Soap and water alone will keep them clean and in good condition. Linoleum is difficult to keep clean unless waxed and then it is dangerous to those passing over it. Rubber and linotile compositions make excellent ward floors. They are resilient, can be procured in beautiful designs, and again can be kept in good condition by plain soap and water. In private rooms, however, hardwood floors give best satisfaction. Add to this a few small rugs and the room assumes an attractive and homelike appearance.

In respect to paint, there is no question but that the soft neutral colors for ceiling and wall have decided therapeutic values. In fact there should be a definite, well-developed color scheme planned for every ward and room. The effect should be soothing to worn nerves and tired eyes, yet bright and cheerful. Such a color scheme enhances not only the aesthetic status of the hospital but creates a happy atmosphere conducive to convalescence.

Revolving windows in both wards and rooms are to be recommended because of the economy of service in cleaning. They also have another point to recommend them. Adjustments are possible in all seasons and weather, whereby air can be admitted without drafts or without lowering the temperature too suddenly.

Heat and Light

One point only respecting heat and light need be mentioned. Steam heating is unquestionably the most satisfactory. Hand control is more serviceable than automatic control and requires less adjusting. Radiators placed against the walls should be covered with attractive grills to protect the paint. All artificial lighting should come from behind the patient. In wards the number of sockets would be determined by the number of patients in the ward. It should be diffused light yet strong enough for the patient to read by without eye strain. Night lights with soft glow should be placed in the floor or side walls to enable the nurse to perform ward duty without disturbing the sleeping patients by snapping on a strong light in the ceiling. Boudoir lamps on side tables seem to give pleasing satisfaction in private rooms for ladies, and the adjustable lights attached to the beds are preferred by men, and satisfaction is always a factor worth considering.

Install Good Beds

We come now to beds—perhaps the most important item in the whole hospital equipment. It is not the purpose of this paper to stress or recommend any special "make" of bed, apparatus, or other equipment, but to stress the point that no matter where the bed is put into service none have economic value save the *best*. The best not only in bed but in springs and mattress qualify for themselves. Not only do they give longer service with little repair cost, but they give greater comfort to the patient, thereby diminishing fretfulness and nervous strain which in turn conserves the neuromuscular energies of the nurse. In private rooms rubber wheels on beds protect the floor and therefore have economic value. In surgical wards beds should be provided with fracture bars for the attachment of fracture apparatus.

[1]Read at the 13th annual convention and 2nd annual clinical congress of the Catholic Hospital Association at Cincinnati, Ohio, June 18-22, 1928.

Woven-wire springs give best and longest service in wards. They are flexible enough for comfort yet durable and substantial enough for wear. Spiral springs are preferable, however, for private rooms. There is really no satisfactory substitute for the hair mattress. It wears well, can be sterilized, made over and with the addition of a few extra pounds of hair is as good as new. Good horsehair mattresses however, are not easily procured at the present time and felt mattresses which are durable are taking their place in both rooms and wards. The finer grades of mattresses are the box and coil-spring type. They are expensive and are used mostly in homes and private pavilions. They are very comfortable, sanitary, and durable. The springs are upholstered with thick layers of hair or felt. Good mattresses should be protected by good rubber sheeting, and no rubber sheeting is too good to protect a bed.

In wards the bed unit including bed and bedside cabinet should be in the modern steel furniture because it is easily kept clean and sanitary. Since this furniture can be obtained in different styles and colors, there is opportunity to carry out the color scheme and combine the elements of beauty and comfort in durable form, thus banishing the institutional monotony of white and brown. Cubicles are now being introduced into the ward with much satisfaction to doctors, nurses, and attendants. They provide a degree of privacy which contributes to the comfort of most patients, and are more convenient than screens. Where observation is desirable as in children's wards, glass cubicles are recommended.

In private rooms metal furniture is not as satisfactory as in wards. For durability, beauty, and upkeep the wooden furniture is much to be preferred with the exception of the bed and bedside cabinet. A steel-framed bed in one of the various wood finishings can be bought to harmonize with the wooden dresser, bedside table, comfortable leather chair, and one or two straight-backed chairs that comprise the furniture in this unit.

Economy of Service

In the consideration of economy of service, the factors of efficiency, effort, and satisfaction play a determining part. Speaking first from the housekeeping point of view, good services require one man and three maids for a ward group of about 100 beds. The man should do the heavier work as scrubbing floors, cleaning windows, and bathrooms, and in transfering soiled linens to the laundry. One maid should be free to get supplies from the kitchen, drugroom, and different supply rooms while the other two should be engaged in the sweeping of floors, dusting, cleaning beds, bedside tables, the pantry, and other dependencies, thus keeping everything clean, sanitary, and in order.

For efficiency in nursing there should be one pupil nurse to every three patients. There is nothing like immediate attention to give satisfaction. A few minutes delay to a patient is a long while and, repeated too often, creates the feeling of neglect. Besides this gives opportunity for nurses to take their time off duty without embarrassing the routine of the floor. One nurse should do all the charting for an allotted time. Two head nurses are most desirable that the department be never left without a responsible person to whom pupil nurses and others can, at any time, refer for direction.

Service Facilities

Ward dependencies, excepting bathrooms, should be located centrally in order to save steps and render all necessary work as easy as possible. Bathrooms should be located at each end of the ward group and should be spacious, well lighted, and well ventilated. Each ward group should have its own service room, utility rooms, linen presses, and bathroom facilities.

The service room should be capacious and planned for utility and convenience. It should be equipped with a hot plate for keeping liquids such as soups, and hot beverages as coffee, tea, cocoa, etc., hot (I'm presuming that the food is being served through a central serving room). Where there is no central serving room, a food conveyor heated thermostatically gives good results. Other equipment in the pantry should consist of an ice chest, cupboard for china, and utensils, a serving table and sink.

The utility room is the workroom, and it is a wise economy that provides all those facilities essential to this unit. Among the necessary equipment to be found here should be an instrument sterilizer, the incinerator, slopsink, metal working table and steel cabinets inserted in the wall for apparatus.

In the bathroom a space should be set apart for the bedpan sterilizer and bedpan cabinet. Cabinets for enema and saline apparatus should also be placed here. By caring for this part of the work here, congestion is avoided in the utility room, particularly during morning hours.

The chart room is an economic consideration. Its central location saves time for the nurse and the doctor. The medicine cabinet is here from which the chart nurse dispenses prescribed medication. It is a great convenience to have a lavatory in the chart room for the doctors to which they may resort after dressings. A small dressing room in connection with the utility room of the surgical group with sterilizer and medicine cabinet, help to economize time and service. Utility room, dressing room, and linen presses should be joining.

There is much to be said on the economy of a central supply service. Central supply service in the distribution of food, beverages, linen, supplies, and dressings is one of the greatest economic considerations of the present time. It gives complete satisfaction from every viewpoint. It minimizes personnel, centralizes responsibility, conserves materials by reducing waste of supplies, saves time of nurses in departments, and standardizes type of service. Supplies such as linens, articles of rubber and glass, drugs, and other materials are obtainable on requisition. A check can therefore

be kept on distribution. Some nurses and some attendants feel licensed almost to be careless and extravagant in the use of hospital supplies. Teaching the cost of supplies should have its place early in the nursing-school curriculum. There is great waste in the destruction of rubber goods by oil, using pointed scissors to remove corks, thus breaking the ends, using glass tumblers for hot drinks, allowing sterilizers to boil dry, and countless other things too numerous to be mentioned here, because the offender hasn't been impressed by the cost of so much waste.

The Turnover of Patients

Another important economic consideration is the matter of turnover of patients. It is more economical to have ten patients occupy a bed one month than to have one patient occupy it ten months. It is to the credit of the hospital to get patients well quickly, and this can be effected by furnishing the best nursing, providing the best equipment and facilities for promoting rapid recovery, having recourse to physiotherapy and electrotherapy when required—as in fracture cases. Another point is apropos just here. Mr. E. M. Statler, late president of the Hotel Statler Co., once wrote "No asset is so unproductive as an unoccupied guest room. The dawn of every day brings a definite overhead and fixed charge against that room; unless it is sold, the setting sun marks the passing forever of the opportunity to recover that overhead and realize that day's profit on the room." This is good economic advice for hospitals as well. Efficiency of service requires that as soon as a patient vacates a room, immediate attention be given to the renovation and cleaning of that room so that it may be placed on the service list with the least possible loss of time. .

Recreational Therapy

And lastly we come to consider the economy of recreational therapy. Economy is a big term which is not limited in meaning to frugality in expenditures of money alone. That which conserves energy in any form is in the province of economy just as well as that which saves dollars and cents.

The whole hospital should be distinguished for its atmosphere of quiet and order. Loud talking, heavy walking, and all noise should be kept at the minimum. Telephones in departments should be in booths for this reason. The sick patient is entitled to this consideration because not unfrequently the rapidity of his recovery is determined by the amount of undisturbed quiet and rest he gets.

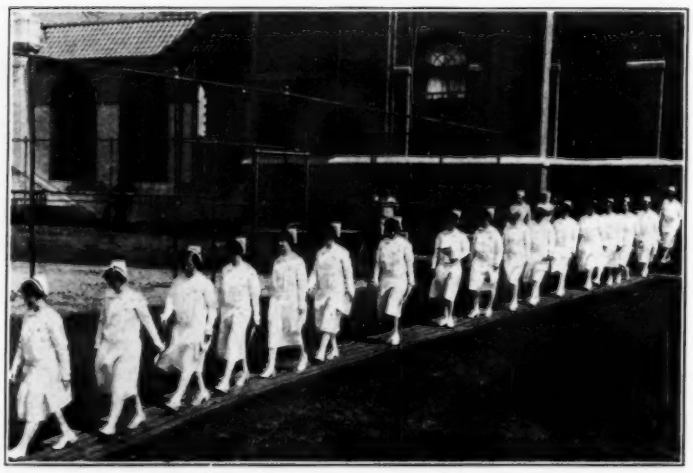
On the other hand, when patients reach the convalescent stage, music, radios, an occasional motion picture, as well as various forms of occupational therapy have decided psychological values. Aside from the aesthetic and moral influence these agents may be made to exert, they promote the well-being of patients by distracting their mind from too much consideration of self.

Summary

To recapitulate: The hospital is for the patient. Every activity whether administrative, professional, or purely mechanical has the patient's well-being for its ultimate end. In this discussion of "Economy in Room and Ward Equipment," this fundamental truth has been the prime determinant in every opinion submitted. We have held that the best in furnishings and equipment is most economical not only because it gives longer service but because it is usually true that when you purchase the best you are receiving its equivalent in comfort.

We have included the aesthetic element because of its consequent uplift of the morale of patients. We have stressed service because it is far more economical to please than to offend. Good service in nursing secures results, conserves peace of mind and physical energies for patients and attendants. Courteous service bears interest a hundredfold, yet this is no adequate or satisfactory reason for our courtesy or for our service. We are courteous—we serve—not because of what we get but because of what we give—because of the Faith within us which recognizes the Divine Economy whereby we render to God a pleasing service when we serve man, His image—with courtesy.

1928
GRADUATES,
ST. ELIZABETH'S
HOSPITAL,
BRIGHTON,
BOSTON,
MASS.



Graduates marching from nurses' home to open-air auditorium, where 40 nurses received diplomas.

St. Elizabeth's Hospital, conducted by Franciscan Sisters, has a capacity of 290 beds and is fully approved by the A. C. S.

The Urological Department of St. Mary's Hospital, San Francisco, Calif.

Charles P. Mathé, M.D., Chairman, Dept. of Urology

In recent years much advancement has been made in the diagnosis and treatment of diseases of the kidneys, ureters, and bladder. This progress has been partly due to the thorough training of the modern urologist, and to the improvement of the cystoscope, but in a great measure it is also due to the establishment of fully equipped urological departments in the progressive hospital of today. In former years cystoscopies were performed in the ordinary hospital treatment room or in a particular portion of the hospital that could not be utilized for any other purpose. Under those unfavorable conditions it was often impossible to do good work, either with dispatch, or under proper aseptic conditions. Through the generous cooperation of the Sisters of Mercy of Saint Mary's Hospital, San Francisco, a spacious urological department has been included in the building recently completed, containing all the apparatus and equipment necessary for the study and treatment of diseases of the genito-urinary tract. The urological department is a separate unit of the surgery proper. It consists of three rooms which are used respectively (1) for ordinary treatments, (2) for electrocautery and diathermy, and (3) for making complete urological investigations. However, all major operative procedures are carried out in the general surgery.

In the treatment room, measuring sixteen feet by sixteen feet, observation cystoscopies are performed and ordinary routine treatment such as bladder and kidney lavages, massage of the prostate, etc., are made. In this room there is a complete assortment of Albarrán ureteral catheters, ranging in size from a filiform to sixteen French (Filière Charrière) in which bulb, olive tip, and Garceau types are included. These are kept in a separate sterilized linen container which is divided into a number of small compartments each of which is marked for catheters of varying sizes. Each compartment is of sufficient length to allow for storing without bending or injuring the delicate ureteral catheter. The Albarrán catheters are kept in a container in the treatment room, the various fulgurating electrodes, cystoscopic scissors, rongeur and alligator forceps are contained in another cabinet in the fulgurating room. The opaque bismuth X-ray catheters are placed in a separate container in the pyelogram room. In this way the proper catheter is always at the urologist's disposal in the room in which it is required. The treatment room contains two irrigation containers, a stationary sink, an electrical transformer, and two sterile tables on which all the necessary equipment required in making cystoscopies is placed. In this room there is a writing desk on which the cystoscopic findings or treatment can be accurately recorded on the proper chart. Shelves are built in the walls for the purpose of storing various solution bottles and cystoscopes. Smaller tables are used for the solutions necessary for preparing the patient and for storing specimens of urine. In order to avoid confusion the centrifuge tubes containing specimens of urine are properly marked and kept in separate containers.

The fulgurating room, measuring eight by sixteen feet, is used exclusively for treatment of bladder and urethral conditions in which electrocautery or diathermy is employed. It contains a high-frequency electrical apparatus which is built into the wall. This room contains all the additional equipment mentioned in describing the treatment room.

The third room in which complete investigations are performed measures sixteen feet by sixteen feet, and is fully equipped for making complete examination of the kidneys, including ureteral catheterization, functional study, urine analysis, uretro-pyelography and cystography. It contains an examining table of the Squier model on which X-ray films are taken without subjecting the patient to the inconvenience of being moved.

The establishment of this modern urological department has made possible the employment of the following technic which offers great advantages to the comfort of the patient and to the convenience of the urologist: After the patient has been properly prepared and draped the cystoscope is inserted and the residual urine and bladder capacity measured. The interior of the bladder is then carefully inspected and the findings noted on a cystoscopic chart. The catheters are then chosen and thoroughly lubricated with olive oil. It has been our observation that thorough lubrication of the catheter facilitates its passage, minimizes trauma of the ureter, and lessons pain to the patient. The catheter is inserted into the ureter as far as the renal pelvis. In some cases in which it cannot be passed readily the patient is placed in the Trendelenberg position. The placing of the patient in this position will cause an unduly mobile kidney to drop back in its fossa, thereby straightening the kink that sometimes prevents the ascent of the catheter, allowing for subsequent passage. After the catheters have been passed into the pelvis the distance from the ureteral orifice to the pelvis is carefully measured. The remaining

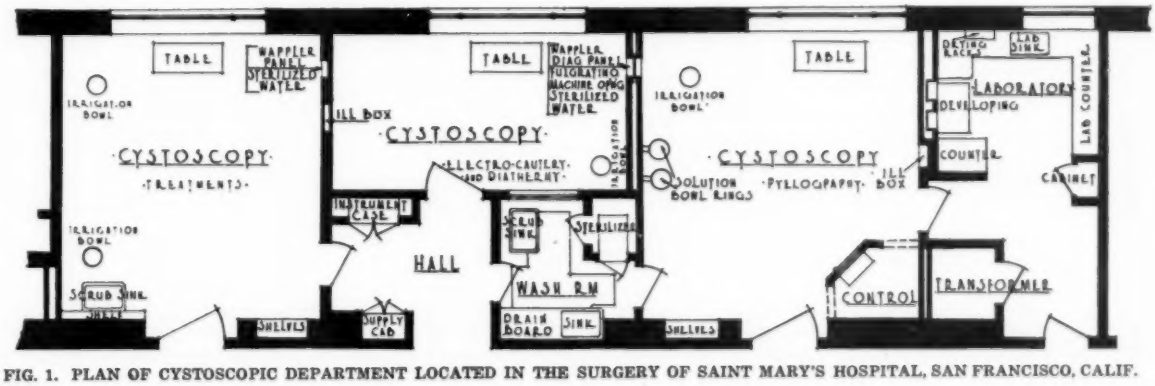


FIG. 1. PLAN OF CYSTOSCOPIC DEPARTMENT LOCATED IN THE SURGERY OF SAINT MARY'S HOSPITAL, SAN FRANCISCO, CALIF.

FIG. 2. CYSTOSCOPY ROOM FOR ROUTINE KIDNEY, BLADDER, AND PROSTATIC TREATMENTS, ST. MARY'S HOSPITAL SAN FRANCISCO, CALIF.

lower portion of the catheter is then passed into the bladder creating a slack which allows for the removal of the cystoscope during the functional and X-ray study of the kidneys. In this way the patient is not inconvenienced by having to retain the cystoscope in place during the subsequent study. A functional study is made in which urea and the phenolsulphonphthalein or indigo-carmin test is utilized. In cases in which suspicious shadows are seen in the region of the kidney or bladder, stereoscopic films are taken with the opaque catheters in place. After this has been completed uretero-pyelography is made. Sodium iodide solution (13½ per cent) heated to 38.5 (c) is allowed to run into the pelvis by gravity from an elevation of 32 centimeters. When the pelvis has been completely filled, a pyelogram is taken in the Trendelenberg, horizontal, and vertical positions. In taking the film in the vertical position the catheters are previously withdrawn well down into the lower ureter in order to secure a good uretero-pyelogram which will demonstrate any mobility of the kidney, or kinking, or stricture of the ureter that might be present. Before removing the catheters the films are developed in an adjoining darkroom. If they are unsatisfactory they are repeated immediately. After the completion of pyelography the sodium iodide solution is allowed to drain away and the pelvis and ureter are thoroughly irrigated with 1:4,000 rivanol solution. In weakened, debilitated, or acutely ill patients unilateral pyelography is the routine, whereas in those patients in whom the ureters have been previously catheterized, bilateral pyelograhy is performed. Immediately after the functional study has been completed and before introducing the pyelographic solution, 0.015 gm. of morphia is administered hypodermical'y. This tends to prevent ureteral and pelvic contraction and minimizes pain. Furthermore, as formally emphasized, olive oil lubrication of the catheters lessons trauma. Heating of the pyelographic media tends to prevent pelvic and ureteral spasm and finally draining away the pyelographic media and making a lavage of the pelvis with rivanol minimizes subsequent reaction in the patient.

We can safely state that with these improvements in technic, made possible by the establishment of thoroughly equipped urological departments, at least 50 per cent of the patients examined suffer little pain, if any, during or after their complete urological investigations.

The department is supplied with two nurses, a graduate in charge, and a student nurse. The former is Miss M. De Noyer, who is in complete charge and is responsible for the operation and maintenance of the entire urological department. She teaches and directs the student nurse, prepares the patients, and oversees the work being done in each room. She is fully trained in roentgenology, takes, and develops the X-ray films, and teaches the student nurse the rudiments of cystoscopy. The student nurse wears sterile gown and gloves. She drapes the patient and assists the urologist by passing him instruments, catheters, syringes, etc. At the end of the cystoscopy she sees that the drainage of urine through the ureteral catheters is satisfactory, changes the bottles in making the functional studies, and takes general care of the patient. The student nurse is changed every two months. Female nurses assist the cystoscopist in treating female patients and male nurses in treating male patients.

The urological unit contains its own sterilizer of the high-pressure autoclave type, washing room, instrument cabinets, and X-ray developing room. The walls of the room are of a dull gray color doing away with the strong glare that tends to fatigue the eyes. All three main rooms contain pipes in which sterile water is brought from a central supply tank. Likewise these rooms are piped for anesthesia. It is not unusual, in less than four hours, to perform from twelve to fifteen cystoscopies consisting of two or three complete investigations, including X-ray study, two or three fulgurations, and six or eight routine kidney treatments or observation cystoscopies. Saint Mary's Hospital can well be proud of her new urological department. It marks a milestone in the perfection of

FIG. 3. FULGURATION ROOM FOR ELECTROCAUTERY AND DIATHERMY, ST. MARY'S HOSPITAL, SAN FRANCISCO, CALIF.
Note the nonsterile and sterile nurse who assist the urologist.

the modern hospital that HOSPITAL PROGRESS has always sponsored. It can well serve as a model for any hospital contemplating the installation of a fully equipped, up-to-date urological department.

Articles Required for Cystoscopic Room

Two Brown-Buerger anterior and posterior observation and catheterizing cystoscopes, No. 26 and No. 22 French, respectively.
One McCarthy cysto-urethroscope.
Two aseptic syringes No. 2083-45cc.
Two aseptic syringes No. 2060-30cc.
Four aseptic syringes No. 2052-15cc.
Six Luer syringes 2, 5, and 10 cc. respectively.
Four needles for Luer syringes, 2 subcutaneous, and 3 intravenous.
Six medicine glasses.
Six glass catheters.
Six rubber catheters, Nos. 16, 18, 20, 22, 24, 26 (French).
Four irrigating and connecting tips.
Four Janet urethral tips.
Twelve small and large perforated rubber tips for cystoscopes.
Twelve small and large closed rubber tips for cystoscope.
Two metal catheters.
Set of sounds, Nos. 10 to 30 (French).
Set of bougie à boules Nos. 10 to 30 (French).
Set of sondes à bequille (silk woven French catheters).
Four stylettes.
Two pair of scissors.
Six hemostats.
Sterile olive oil.
Sterile lubricant.
Six Monel steel kidney-shaped pus basins.
Four circular pus basins.
One glass irrigator (3,000 cc) with rubber tubing, 1.3 meters long.
Four rubber tubes 1.3 meters in length and 16 (French) in diameter.
Three rectangular pans for phenol 5 per cent, alcohol 50 per cent, and sterile water for sterilizing and rinsing cystoscopes, measuring 42 cm. in length, 10 cm. in width, and 5 cm. in depth, with covers.
Complete set of ureteral catheters, Albarrán, Garceau, and X-ray type, measuring from 3 to 16 (French). Assortment contains types with olive and whistle tips, bulbs plain or wax, dilating and nonperforated types, and a number of filiform catheters.
1,000 cc. graduate.
Twenty-four sterile centrifuge specimen tubes.

Solutions

240 cc. novocain 2 and 4 per cent.
120 cc. butyn 1 per cent.
120 cc. protargol 2 per cent, 1 per cent, and ¼ of 1 per cent.
120 cc. argyrol 10 per cent and 5 per cent.
120 cc. mercurochrome 2 per cent and 1 per cent.
120 cc. rivanol 1 per cent and 1:4,000.
120 cc. silver nitrate 50, 20, 12½, 2, 1, ½, and ¼ per cent.
120 cc. neutral acriflavine 1 per cent and 1:4,000.
120 cc. potassium permanganate 1 per cent.
120 cc. sodium hydrate 25 per cent.
500 cc. sterile sodium iodide 40, 25, and 13½ per cent.
Ampoules of phenolsulphonphthalein, indigo-carmin and allocaine.
120 cc. bottle of bichloride tablets.
500 cc. tincture of green soap.

Standing Orders for Nurses in Cystoscopic Room

Preparation of Patient

1. The patient is placed in the lithotomy position. In case receiving anesthesia, stirrups are used.

2. The entire vulva, including the pubic hair, is thoroughly washed with a solution of green soap.

3. The vulva is then sponged off with 1:4,000 bichloride of mecury solution. In washing, care must be taken to commence in the region of the pubis and wash down toward the anus. Every sponge that touches the anus must be immediately discarded.

4. A sponge saturated with bichloride solution 1:4,000 is then left in place against the urinary meatus.

Care of Patient

1. After the ureteral catheters have been inserted into the ureters, urine is collected from the right and left kidney in two centrifuge tubes. The catheter in the right kidney is cut at an angle of 45 degrees, whereas that in the left kidney is cut at an angle of 90 degrees.

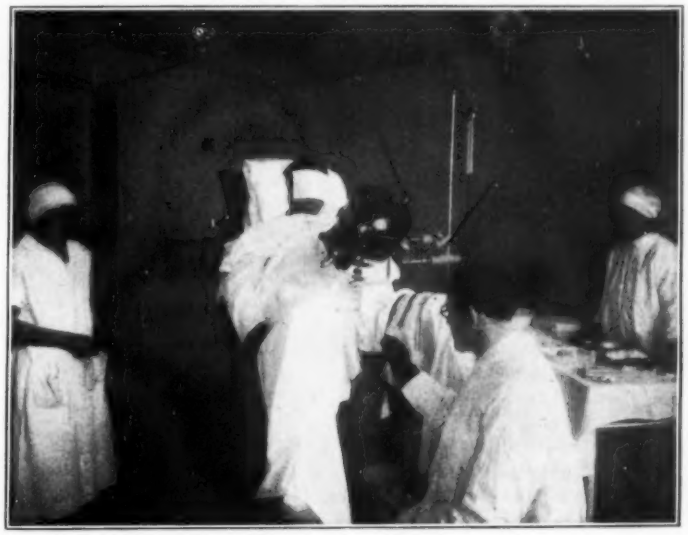


FIG. 4. PYELOGRAM ROOM FOR COMPLETE CYSTOSCOPY AND UROGRAPHY, ST. MARY'S HOSPITAL, SAN FRANCISCO, CALIF.

Doctor G. Oviedo, associate urologist, is in the process of making a utero-pyelogram with the patient in the vertical position. Miss M. De Noyer, graduate in charge, is about to take the film, assisted by a sterile student nurse.

2. The left kidney catheter is then placed in bottle labeled L-1 and the right kidney catheter is placed in bottle labeled R-1.

3. 4 cc. of 25 per cent sodium hydrate is poured into bottles labeled R-1 and L-1.

4. The nurse notes the appearance time which is determined by the contents of the bottles taking on a bright red color. When indigo-carmin is employed no sodium hydrate is used and the appearance time is determined by the urine taking on a blue color.

5. Bottles R-1 and L-1 are then removed and replaced by R-2 and L-2 and the urine collected from each kidney for a period of fifteen minutes.

6. R-2 and L-2 are removed and the catheters then inserted into bottles R-3 and L-3.

7. The urine is then collected for another fifteen minutes. All bottles are saved and sent to the laboratory.

8. Care must be taken to see that the tubes do not stop up and that the drainage from the kidneys is continual. If the tubes stop up, 2 cc. of sterile water is injected into the catheter to reestablish drainage.

9. Under no circumstances is a nurse to remove a ureteral catheter from the patient without an order from the attending physician.

After Care of Patient

Immediately before making pyelography the patient is given 0.015 gm. of morphia. At the completion of the cystoscopic study the patient is returned to his or her room where heat is applied to the kidneys, ureters, and bladder every two hours by means of a hot-water bag, or boric compresses.

The Principles Underlying the Treatment and the Clinical Management of Diabetes Mellitus[1]

Cecil Striker, M.D.,Cincinnati, Ohio

IN opening a discussion concerning diabetes, one cannot select a better prelude than that which occurred in a recent paper by H. J. John. He stated: "There are about one million diabetic patients in this country today. This seems like a tremendous army of afflicted and yet I believe if we had accurate data on the population at large, and could include the prediabetic (the candidates for diabetes) and the mild diabetics, whose condition remains unrecognized until a more advanced stage of the disease leads them to consult a physician, the number would be increased to nearly two million. We are, therefore, confronted by a most important problem, from whatever angle we may consider it.

"The outlook of a diabetic patient depends primarily on the treatment of the condition, not merely by the doctor, but by the patient himself, who after all has the heaviest burden to carry, so that were we to consider the proportional responsibility of each, I should say that that of the patient is about 90 per cent, and that of the physician about 10 per cent. It is, therefore, exceedingly important that the layman as well as the physician have an accurate basic knowledge of the cause of diabetes and the principles on which its treatment is based."

Diabetes mellitus has always been a very interesting disease to the physician for two cardinal reasons. In the first instance its causation and treatment have until comparatively recent times been very much in confusion, and secondly, through the altered metabolic state of the body many fundamental chemical reactions of the body have been discovered. The disease really has been treated by chemists with the assistance of the clinician because its manifestation has been the result of chemical changes instead of morphological changes.

The underlying basic principle in the treatment is dependent upon dietetic control, or dietetic control plus insulin. The dietetic treatment of diabetes dates back to Thomas Willis about the latter part of the seventeenth century. He stated that the treatment should aim to thicken the blood and supply salts, accordingly he prescribed milk, starch, gummy foods, and lime water. Cantani in 1850 was the first to restrict carbohydrates. In June, 1914, F. M. Allen, after much experimental work, advocated the starvation treatment for diabetes mellitus. This was a very important contribution to the treatment of this disease. Although a great number of individuals under the Allen regime were unable to carry on, there was a definite lessening of the number of patients who had glycosuria and a diminution in the mortality. This form of treatment was popularized by E. P. Joslin.

Diabetes is defined as a lessened supply of endogeneous insulin which in turn causes a lessening of glucose utilization. In speaking of glucose utilization one must calculate the available glucose from protein and fat as well as from carbohydrate. It has been demonstrated that 58 per cent of the protein molecule and 10 per cent of the fat molecule are converted into glucose in the metabolic process. Therefore, one should not speak of carbohydrate diet or carbohydrate tolerance but should speak of available glucose or glucose tolerance.

The goal to attain in treating a diabetic is to prescribe a diet that will keep a patient aglycosuric; that will prevent loss of weight, and that will give the maximum caloric intake with the minimum available glucose.

No diet is properly constructed until it will maintain an individual in nitrogen equlibrium. It has been demonstrated both by animal experimentation and clinically that a normal organism can be kept in nitrogen balance on two-thirds gram protein per kilogram body weight providing the caloric intake is sufficient. Karl Petren was able to maintain a patient in nitrogen equilibrium on one-half gram protein per kilogram of body weight. Since one of the established principles in the treatment is to depress the metabolic process, it would seem unwise to give large measures of protein. It has been shown by Rubner and more recently by Lusk that protein has something inherent in its molecule that raises the metabolism. It is believed that the specific dynamic action of protein is a function of the amino acid-glycine and alanine being greatest.

Francis G. Benedict observed that in a fasting man 80 per cent of the energy was coming from the combustion of fats. Until a short while ago it would have been very unorthodox to prescribe a diet high in fat. The idea was to give small amounts of fat in the diet to prevent the formation of acetone bodies, the principle being forgotten that it is not the food ingested that counts, but the food metabolized.

Newburgh and Marsh boldly used diets with high-fat and low-protein contents in a series of cases and found amazing results. These clinical results were explained somewhat by the invitro experiments of Shaffer. He found that by the addition of glucose to test tubes containing aceto-acetic acid in the presence of hydrogen peroxide (an oxidizing agent) alkali and proper conditions of temperature, that the aceto-acetic acid was rapidly oxidized. He found that one molecule of glucose caused the oxidation of as much as three molecules of diacetic acid. He, therefore, assumed that the ketoytic behavior of glucose in vitro, was analogous to the antiketogenic property of carbohydrate in preventing or abolishing ketonuria in the human subject. The available glucose in the diet should be balanced against the available fatty acid formers in the ratio of one to two. In some instances this ratio can go very much higher and still keep the patient well within the zone of safety as far as acidosis is concerned.

The occupation of the individual should be known so that the proper caloric intake can be calculated. It is common knowledge that 30 to 40 calories per kilogram of body weight will keep a patient in caloric equilibrium at a sedentary occupation. This may be increased up to 60 to 70 calories per kilogram as the energy requirement increases.

To reiterate, the goal sought for in handling a diabetic individual is one that will give the patient in his diet an available glucose within his tolerance, with a caloric intake that will not permit him to gain an excessive weight, with enough protein to keep him in nitrogen equilibrium and with a ketogenic-antiketogenic ratio that will prevent ketosis.

If the above cannot be done, then the patient should be made able to do so by the only recognized adjuvant in the treatment; namely, insulin. As you know, this is an alcoholic extract of the insular portion of pancreas that was successfully obtained by the now classical work of Banting and Best.

[1]Read at the 13th annual convention and 2nd annual clinical congress of the Catholic Hospital Association at Cincinnati, Ohio, June 18-22, 1928.

Insulin has three specific functions in the therapeutic regime. (1) It is almost a specific in the treatment of diabetic coma; (2) it enables a severe diabetic to be given a diet so he can carry on, and (3) it is an aid in tiding milder diabetics over complicating infections.

In the "uncomplicated" diabetic, whenever an insulin regimen is planned, one can roughly caculate that one unit of insulin will take care of two grams of glucose appearing in the urine. However, in severe diabetes or in complicated diabetes such as gangrene, acute infection, there is no direct ratio between the urinary glucose and the dosage of insulin.

The timing of insulin is usually adjusted to meet the maximum postprandial blood sugar level and can be regulated only by examining fractional specimens of urine.

During the past two years there have appeared several medicaments for oral administration. These have been recommended as a substitute for insulin, thus obviating hypodermic injection. Synthalin, myrtillin, and gluchorment have enjoyed many metablic investigations, but as yet they cannot be considered as a substitute for insulin, nor can they have a definitely accepted place in the treatment of diabetes mellius.

Insulin is a two-edged sword. Since its advent many advances in the treatment have been made, but on the other hand, there are two points of danger that should be looked for. Many patients experience hypoglycaemic reactions which are very uncomfortable and in some instances very dangerous. Also the indiscriminate use of this valuable drug has permitted many diabetics to become overweight. This we know is a serious situation in the life cycle of a diabetic. In all instances the patient should be instructed to adhere strictly to his diet and not enjoy a "luxus diet" overcoming the glycosuria by large doses of insulin.

In the treatment of diabetics, large doses of insulin should be given intravenously or subcutaneously at intervals of 4 to 6 hours. As long as there is a hyperglycaemia there is no necessity of using glucose either subcutaneously or intravenously. These patients should be kept warm and plenty of normal salt solution should be given under the skin as there is always an accompanying dehydration in diabetic acidosis. It might be said that eternal vigilance is the price of victory, because even though the patient be brought out of coma there is always a great danger of the patient returning into coma, and this second comatose state is much more severe than the first one.

In a study of cases from various clinics where patients have had their tolerance checked before and after insulin therapy, there has been no conclusive evidence that increase of tolerance has taken place. In a study of his insulin cases, Joslin states that the average dose of insulin taken by his patients who began in May, 1922, had risen to 21 units in one year. This is about twice as large as the same patients were taking in May, 1922.

Since insulin has been used, the cause of death from diabetes had changed considerably. Heretofore the principal cause of death was coma and all physicians feared that end for their patients, but now coma has diminished as a cause of death and the complications of the disease are causing the death. The cause of death from diabetes are: coma, sepsis, cardiovascular disease, including gangrene and pulmonary tuberculosis. Many patients are saved from coma only to die from other complications. Therefore, the physician should always be a strict taskmaster in handling the diabetic as frequent mild indiscretions over a period of years produce cardiovascular changes that are irreparable.

Bibliography

John, H. J., Southern Medical Journal, April, 1927.

Fitz, R., and Murphy, W. P., American Journal of Medical Science, September, 1924, No. 3, Vol. CLXVIII, p. 313.

Woodyatt, R. T., Archives Internal Medicine, August, 1921.

Newburgh & Marsh, Archives Internal Medicine, April, 1923, Vol. 31, pp. 455-490.

Joslin, E. P., Diabetes Mellitus.

Shaffer, P. A., Antiketogenesis; Journal of Biological Chemistry, October, 1922, Vol. LIV, No. 2.

GRADUATES, ST. JOSEPH'S HOSPITAL, CONCORDIA, KANS.

A Preliminary Course in Terminology[1]

Sister Agnes de Sales, S.C., M.A., Good Samaritan Hospital, Cincinnati, Ohio

My interest in the terminology of nursing was aroused more by chance than design a few years since during a stay in the Good Samaritan Hospital. Occasionally, lacking more congenial literature, I would pick up a medical magazine and find amusement in defining the unfamiliar, technical words that sprinkled its pages. When the Sister supervisor made her rounds, I often had a list of tentative definitions for her to verify and soon we were both engrossed with the practical value to nurses of that which enabled me, a "school mar'm," to define at sight, strange polysyllables of medical lore—a little knowledge of the Greek and Latin on which, research discloses, more than 90 per cent of your professional vocabulary is based.

To know the original meaning of the words that compose one's working vocabulary, not only renders its acquisition easy but insures also its intelligent use. You all remember from your student days, how your stout hearts quailed before the dread array of unpronounceable, meaningless terms that challenged your conquest. Senior and graduate nurses have told me that by far the more difficult part of their training was not the matter to be comprehended but the terminology to be memorized. And yet is not the matter comprehensible mainly by means of terminology?

Lectures in a Foreign Language

Fancy a lecture, thickly sprinkled with Chinese, delivered to a bevy of American girls and one gets a notion of the handicap under which the average high-school graduate begins the study of nursing. A common medium of understanding is required to communicate thought. Let the lecture be ever so freighted with knowledge, what does it carry to those for whom its language is foreign? But this obstacle to learning would not exist if the student were made familiar with the Greek and Latin words which form, as I have said, over 90 per cent of medical terminology.

If, for instance, on being presented with a bulky volume, entitled Anatomy, the word immediately connotes to the student nurse, "a cutting up," happy she, not because the English rendition may suggest hilarity, but because she has the key to practically all the 4,500 words the book contains. To her the Greek *osteon* and *logos* are synonymous with bone and science, and the meaning of osteology is revealed. Similarly "hydrocephalous" resolves itself into "watery-headed" and the surgeon, (a name softened from the old English for cheirurgeon) who removes diseased parts that menace health or life, is the cheirourgos, the "handy man" of the Greeks.

In like manner she knows that her materia medica contains all she must learn of medical materials or healing stuffs and she soon discovers that they, like the book itself, have Latin names. Latin, too, is the key to the language of prescriptions, wherein accuracy and precision of meaning are, in a very literal sense, of vital importance.

The other subjects in the nurses' curriculum are quite as classical: Bacteriology, chemistry, clinical studies, dermatology, dietetics, gynecology, histology, neurology, neuropathology, obstetrics, ophthalmology, orthopedics, pathology, pediatrics, physiology, surgery, therapeutics, psychiatry.

A Few Root Words

Now one initiated in these languages already knows, apart from medical sources of information, at least of what these subjects treat and once launched into their mysteries, she finds, not arbitrary labels, signifying nothing, without any apparent connection with the things they designate, but descriptive terms pointing to the real nature of the things they name. She knows that any word ending in *aemia* pertains to the blood; in *phobia,* to fear; in *algia,* to pain; in *cele,* to a tumor or swelling; in *lith,* to a stone; in *tomy,* to a cutting; in *ektomy,* to a cutting out; in *agogue,* to a leading. She knows that a biceps muscle has two heads, that ethmoid bone is sieve-like, that the sphenoid bone is wedge-shaped, because the technical words mean just that in plain Latin or Greek. Knowing that hydrargyrum is Greek for "silver-water," she is not likely to forget it as a synonym for mercury.

The prefixes, too, so generously employed, are also, to such a one, generously enlightening as well, for she meets them equipped with the knowledge that *a* or *an* means absence of; *apo,* away from; *dia,* through; *dys,* difficult or painful; *ec,* outside; *epi,* upon; *hemi,* half; *hyper,* above; *hypo,* under; and so on.

Indeed terminology is to such a student not a drudgery, but an intriguing game of analysis. There *is* a pleasure in knowing at first sight that Rhinodacryolith is not a town in Wales, nor a Russian bolshevik, nor a prehistoric animal—but has to do with *nose, tears,* and *stone* respectively.. One needs the medical dictionary only for confirmation of one's conclusions. Such knowledge gives the nurse not only an instant but a deeper understanding of scientific terms and eliminates the evil of memorizing words without a comprehensive grasp of their meaning, which is as harmful to the mind as undigested food is to the body. And just as food, properly assimilated, affords additional energy, so do words, adequately understood, enlarge our mental capacity. For though one ignorant of the original meaning of these words may, with labor, master their present technical denotation, she must remain quite oblivious of their highly significant connotation, and without this knowledge, words lose much of their power to evoke thought, and render but a fraction of the service of which they are inherently capable.

Getting the Connotation

The case is similar to that of an artisan who does not know what his tools are capable of doing. Perhaps you have been led by curiosity, that fruitful mother of knowledge, to examine closely the well-known instrument of the carpenter, the try-square, and have observed how it is literally tattooed with lines and figures, all of which have scientific value for the user of the instrument, did he but understand the hieroglyphics. But the average mechanic does not. He uses the tool to square a board or to give proper pitch to a roof, but its other uses are of no avail to him. Many a student employs scientific terms in much the same way. They trip glibly off her tongue but she does not comprehend their full significance and in using them she exposes herself to the embarrassment of amusing those who do. I once asked a prominent physician and surgeon of Cleveland, who had had collegiate and university training before beginning his medical course, if he did not regret the years he had devoted to Greek and Latin and received in reply a very decided "Absolutely not!" He went on to say that whereas his classmates in the medical school spent hours memorizing terms, and then had only a superficial knowledge of their meaning, he knew the terms instantly and from their descriptive power often had an immediate insight into the nature of the things themselves and of their functions.

We are worshipers of efficiency, of success, and we logically think that the road thereto is the road successful

[1]Read at the 4th annual convention of the International Catholic Guild of Nurses at Cincinnati, Ohio, June 18-22, 1928.

1928 GRADUATES, HOLY NAME OF JESUS HOSPITAL GADSEN, ALA.

This is the first class graduated from the school of nursing, and the five graduates are Sisters of the Community of Missionary Servants of the Most Blessed Trinity.

men have traveled. So it will be of interest to hear how men of the highest standing in the legal and medical professions value the ancient languages in relation to their calling.

Coke, the eminent jurist says: "Nomine si nescis, perit cognitio rerum." "If you do not know words, you will be ignorant of things."

John A. Wyeth, president of the medical board of the Polyclinic Hospital, New York City, thinks that "Latin is essential to intelligent medical training, and the decline of Greek in the classical curriculum is certainly, as far as medicine is concerned, a great mistake."

William Sydney Thayer, professor of clinical medicine, Johns Hopkins University, says, "One may search long among the truly great names in medicine for one whose training has been devoid of this vital link between the far-reaching radicles of the past and what we are pleased to regard as the flowering branches of today."

In the opinion of W. J. Mayo of Rochester, "A moderate classical education is essential to a proper understanding of the sciences and is necessary for clear, accurate, and incisive recording and transmission of scientific thought."

William Campbell Posey of Philadelphia, says: "Latin is a *sine qua non* to a physician. The formulas of his prescriptions are embodied in that language and most early medical writings found expression in it."

And again, says one of no less authority, Alexander Duane of New York City, "I believe that it is of much greater value to me professionally to have studied Greek than to know German."

A Course for Nurses

Need we be reminded that what is true of the doctor himself must apply in some degree at least to his assistant, the nurse? The faculty of the Good Samaritan think so and have expressed that belief by devoting 45 hours during the freshman year to a highly specialized course in Greek and Latin etymology for the better understanding of medical terms in daily use by physicians and surgeons.

"With the already crowded curriculum?" For the sake of the crowded curriculum. There are 50,000 terms defined in the 1925 edition of Dorland's Medical Dictionary, but after all, that formidable 50,000 is composed of some few hundred Greek and Latin roots variously combined. Know the roots and from a dozen roots, how many hundreds of terms are formed! For instance Dorland has 398 terms beginning with the Greek word for blood, to say nothing of numerous other compounds where it is medial or final. Or again, given, say fifty common Greek anatomical names and some twenty pathological terms, such as edema, algia, necrosis, cleisis—a knowledge of these seventy words embraces the thousand combinations that can be formed therefrom.

If one is looking for a timesaver, and I think nursing schools are, this is one.

Moreover, Coke's aphorism, "If you would know things, you must know words," was verified in the record made by last year's Latin class which excelled all preceding classes in the percentages attained in their various subjects.

To show you just how this course facilitates the study of other subjects, I shall ask these students to give the meaning of a list of words they have not yet met in their professional studies.

(Here a list of unfamiliar words was presented for definition to the class in terminology).

Not only does it thus evidently ease the burden of memorization during the training period but endows the student with the life-long ability to understand new terminology as it appears, which it does with twentieth-century speed—between the 1923 and the 1925 edition of Dorland's Medical Dictionary, 2,500 words were added to the medical vocabulary. And when science needs a word to express a newly discovered fact, it goes to the rich storehouse of the ancient classics, for there it can find an adequate expression for any idea, an expression with a precise and unchanging meaning, universally intelligible —such an expression as science requires. I might add here, that the scientific departments of many of our great universities are clamoring for such a course. Dr. Nieuwland, professor of chemistry at Notre Dame, several years ago begged the dean of the classical department to prepare a text on the Greek-Latin basis of scientific terminology. He complained, as have other professors of science, of the time spent, not in the study of the sciences, but in mere memorization of terms, which a little knowledge of Greek and Latin would obviate.

One may ask if the four years of high-school Latin is sufficient equipment. It is not, for it does not include the specialized vocabulary met in medicine. Then, too, very few study Greek in high school and although I have not made an exhaustive study of the matter, I am fairly sure that Greek predominates over Latin in medical terminology.

Medical Language Simple

You may ask, too, where shall we get a teacher? If you are near a high school or college, the answer is obvious. If not, let one of your regular instructors qualify. The course is quite simple. It is rigidly limited to professional needs. the vocabulary being confined exclusively to words used in medicine. Economy is carried still further by giving only the outstanding word of a related group, cognate terms being deduced by a few simple principles of word building constantly applied. There is very little syntax provided for in the Latin section and none in the Greek. The course is simply a study of the medical words in their original Greek and Latin. I'm sure that in five hours I could give an intelligent person, even without previous knowledge of Greek and Latin, sufficient help to go on and master the course herself and then teach it to others.

I have no doubt that the day is not far distant, when in medicine as in other sciences, there will be required a preliminary course in terminology such as the Good Samaritan has adopted. The question is, shall we be leaders in supplying this crying need?

Hospital Progress

EDITORIAL EXECUTIVE COMMITTEE

Rev. Alphonse M. Schwitalla, St. Louis, Mo.
Chairman

Rev. C. B. Moulinier, St. Louis, Mo.
Acting Editorial Director

Rev. William P. Whelan, Chicago, Illinois
Associate Editorial Director

Mr. William C. Bruce, Milwaukee, Wisconsin
Associate Editor

Mr. Elmer W. Reading, Milwaukee, Wisconsin
Editorial Secretary

OUR MAGAZINE

There are four things in regard to our magazine which I should like to bring out with all possible emphasis: First, the quality of its articles, editorials, and news items; second its circulation; third, the kind and number of its advertisements; and fourth, its make-up as a magazine; i.e., paper, printing, illustrations, arrangement, sections or departments.

If these four features of our magazine are all that we can reasonably expect, all we need do is to continue as we have been doing in the past. But will it not be wise and proper for us to take these points in sequence and say a few words about each?

Quality

Have our articles, editorials, news items in the past taken as a whole, been all that they might have been and all that we wished them to have been? Have they been as fresh, as personal, and as enlightening as we wish them to be for the future? Perhaps there is no one so optimistic, not even the authors of the articles and editorials, as to claim that what has appeared in the magazine was as pointed in thought, as attractive and inspiring with individuality, as carefully wrought in artistic finish as we would all wish them to have been. It may be well to add here that few, if any of us, even though inspired by enthusiasm for a new *era* are infatuated to the degree that we confidently expect all our future articles and editorials to be entirely lacking in a certain drab monotomy, a certain wearisome repetition, and a certain unmistakable colorlessness of style. We are hospital people, superintendents, doctors, interns, and a few interested hospital standardizers, and eager helpful members of the clerical profession, and for this very reason we are apt to be routinists, middle-of-the way people, almost instinctively clinging to what has been. We hold to traditions, we walk in ruts, we run on tracks already laid; much of this is inherent to the nature and development of medicine, nursing, and hospital management. Much of this is good, even necessary, but if we are to really grow into a new era; if our hospitals, one by one, as well as in groups, are to standardize themselves, are to rise above the average plane set by national programs and plans, every hospital must become more self-critical, must have or quickly develop an urge toward the highest and the best in medicine, nursing, and hospital procedures. This freshening and renewing spirit in the hospital can originate only in individuals; hence there must be hospital leaders. Leadership in organized institutions such as hospitals are, means an unusual type of mind and an exceptional kind of character. The humdrum persons, those who are too easily satisfied are the ones whose eyes are constantly turned to the past and never look out into the future. These are not people who create a new era or who are capable of taking part in things that are new and progressive. We must, therefore, have or fashion amongst our hospital superintendents, superiors, chiefs of staff, and heads of departments, interns, superintendents of nurse schools and their staff, and supervisors of floors, thinkers and doers of the proved newer and better things. There must be ample knowedge, there must be quickly ripening experience, there must be strong personal daring in a few at least on whom the destiny of the hospital depends, if the hospital is to rise above the grade of mediocrity. If there is to be a new era, in any sense of the word, in our hosiptals it is such people who will make our magazine an instrument of power in the hospital world. Our magazine must be an inspiration to all hospital workers. It must be a guide in all the safe, sound, and proved procedures in hospital practice, while at the same time, our contributors must have minds and characters which bring new problems into the hospital for solution and promotion. Persons of this kind are the ones whom HOSPITAL PROGRESS must seek out as ready and willing writers for its pages.

Circulation

If the whole hospital world—superintendents, doctors, nurses—will only become aroused to the undeniable fact that hospitals have the overwhelming burden and tremendous responsibility to take a large and evergrowing part in the care of our people's *health*, and that our hospital magazines are a most potent medium through which to diffuse the necessary knowledge about such problems and the ways in which such hospitals may meet and solve the difficulties involved, every hospital in the land, every real hospital doctor, and every capable, ambitious superintendent and nurse will soon come to consider it a professional duty to have and to read HOSPITAL PROGRESS, as well as other hospital magazines. It should, therefore, become a very serious personal and professional obligation in the conscience of every hospital worker who has the knowledge, experience, and ability to *write*, to contribute whatever he or she can to the general fund of knowledge so rapidly and soundly developing in the hospital mind of our country. HOSPITAL PROGRESS is determined to seek out and secure such individuals in our country and to seek to obtain contributions from them for every succeeding number. Upon this sane and sure basis the circulation of the magazine should grow in proportion to its worth and appeal.

Kind and Number of Advertisements

Generally speaking, the number and kind of advertisements in a magazine or paper are due to its circulation. This is partly true of hospital magazines, therefore it is valuable from a financial point of view for a magazine to have a large circulation because it is

likewise valuable to the advertiser; but it is also true that the advertiser measures the value of his advertisement in dollars and cents by the purchasing power of the subscriber. Hence, it is easy to draw the conclusion that the subscribers to HOSPITAL PROGRESS are of value to the advertiser in proportion to their willingness to be influenced in their purchasing by the advertisements that appear in HOSPITAL PROGRESS. A further conclusion necessarily follows: Hospital members, institutional, or individual, should feel an obligation of *honor,* if not more serious, to be guided in their purchases by the advertisements as they appear in HOSPITAL PROGRESS.

Make-up of the Magazine

The first copy of HOSPITAL PROGRESS was as presentable as the last. This is due to the fact that the Bruce Publishing Company contributed to the make-up of the magazine a knowledge and experience gained through some thirty years of publication. The American School Board Journal, the Industrial-Arts Magazine, along with HOSPITAL PROGRESS are three most creditable publications produced by the Bruce Publishing Company The new board of editors in conjunction with the staff of the Bruce Publishing Company will undoubtedly develop during the coming year, some other departments or sections in the magazine and make it more comprehensive of the whole health field. So finally we think HOSPITAL PROGRESS is about to enter into a new *era.*—*C. B. M.*

THE SILENT ONES

It is good to learn from letters and personal communications that the Sisters and the nurses and the medical staffs of our hospitals are reading HOSPITAL PROGRESS with increasing interest and profit. To help even a little toward the advancement of Catholic hospital work is a precious achievement.

Each monthly issue of HOSPITAL PROGRESS is made more profitable by the cooperation of our hospitals themselves, through the sending in of papers and studies, of items of news and of suggestions. All the readers of HOSPITAL PROGRESS, therefore, ought to be grateful to those whose aid makes each issue possible.

But careful readers of our magazines will notice that not all the hospitals which are members of the Catholic Hospital Association are taking an equal part in contributing toward the contents of the magazine. Check off a year's issues and you will find that out of the nearly six hundred hospitals which are members of the association, hardly more than one in ten make a proportionate contribution to the magazine. True, items are sent in from time to time as the result of many requests. But the contributions of articles, papers, and studies, come for the most part, from a comparatively few.

This is regrettable from many standpoints. The hospitals themselves lose by not coming forward to contribute to HOSPITAL PROGRESS. Such contributions stimulate the interest of the staff. They give the hospital prestige in the hospital world. They stimulate study and interest on the part of the nurses and interns. Whatever is put in print remains for many years and has an enduring influence.

The motive of charity ought also to induce hospital administrators to do everything possible to encourage contributions to HOSPITAL PROGRESS. Every hospital has some addition to make to the total of hospital achievement. The official organ of the association offers an outlet for what is best and finest in the hospital, whereby it may reach the general hospital world. Those who persistently neglect to send in contributions, while at the same time they themselves enjoy and profit by the contributions of others, have surely something to regret.

We trust that these reflections will prove effective in inducing some of those hospitals which have hitherto remained among the silent ones to induce their staff to become regular contributors to HOSPITAL PROGRESS, and to make every effort to send in items and news of their hospital so that the pages of HOSPITAL PROGRESS may become richer and richer and its readers may find there more and more help and inspiration.—*E. F. G.*

New York Poor Laws

The bulletin issued by the department of charities of the state of New York, for July, 1928, gives the following summary of the functions of the department in regard to state and alien poor:

"The superintendent of state, alien, non-resident, and Indian poor performs a highly important administrative function of the state department of charities and is in constant contact with the poor-law officials in the state and with social workers representing the responsible private charitable organizations. The superintendent is also responsible for the actual care and maintenance of state and Indian poor persons. Relief is given to Indian poor living on reservations besides caring for those who are dependent in hospitals, almshouses, and orphanages.

"State poor are those persons who have no claim on city or county aid because they have not resided continuously for sixty days in any one county of the state during a period of a year prior to their application for aid. When such poor person applies for aid or medical care, the poor law officials refer his case to the department which after establishing the facts, may effect his removal to his legal settlement or otherwise make provision for his care and maintenance. This is accomplished by contract with certain county almshouses referred to as "state almshouses."

"Non-resident poor are those who have lived in a county for more than sixty days, but not in the state for one year. Such persons are removed when practicable to their place of legal settlement and pending investigation and removal, are cared for at county expense.

"Alien poor are persons who are not naturalized. Such persons are deported by the United States Immigration Service when warranted by the immigration laws, or removed by the state department of charities when practicable or in the interest of the state and welfare of the individual. With few exceptions aliens are not deportable by the immigration authorities unless it can be established that the causes for dependency existed prior to arrival in this country within a period of five years.

"The following figures cover the year ending June 30, 1928: Removals of state poor, 83; removals of non-resident poor, 1,275; removals of aliens under public care by the U. S. Immigration Service, 98; removals of aliens under public care by the department, 222; number of Indians cared for, 459; number of state poor cared for, 387.

"Removals were made to 30 foreign countries and to about every state of the United States, including Porto Rico, Virgin Islands, and the Philippine Islands.

"Opinions are frequently sought by poor-law officials and other social workers in the state concerning settlement and responsibility. These matters are given prompt consideration."

St. Edward's Mercy Hospital

Fort Smith, Arkansas

ST. EDWARD'S MERCY HOSPITAL, FT. SMITH, ARKANSAS

St. Edward's Mercy Hospital began its life in the old convent of the Sisters of Mercy, which was moved and remodeled for hospital use. It was a very attractive building of the old colonial style with wide porches on four sides. This building had accommodation for 30 patients and in a very short time was found too small for the many desiring admittance.

The large porches of the upper floors were inclosed and heating apparatus installed and a bed capacity of 50 patients was the result. The lower porches were also inclosed making very desirable accommodation for the nurses in training. The Sister supervisors stayed at St. Anne's convent on the adjoining block as the Sisters of both places belonged to the same community.

The convent site and St. Edward's occupy two and a half blocks in the center of the city and is one of the beauty spots of the "Border City." This property was originally the headquarters of General Zachary Taylor during the Mexican war and is of historic and romantic interest.

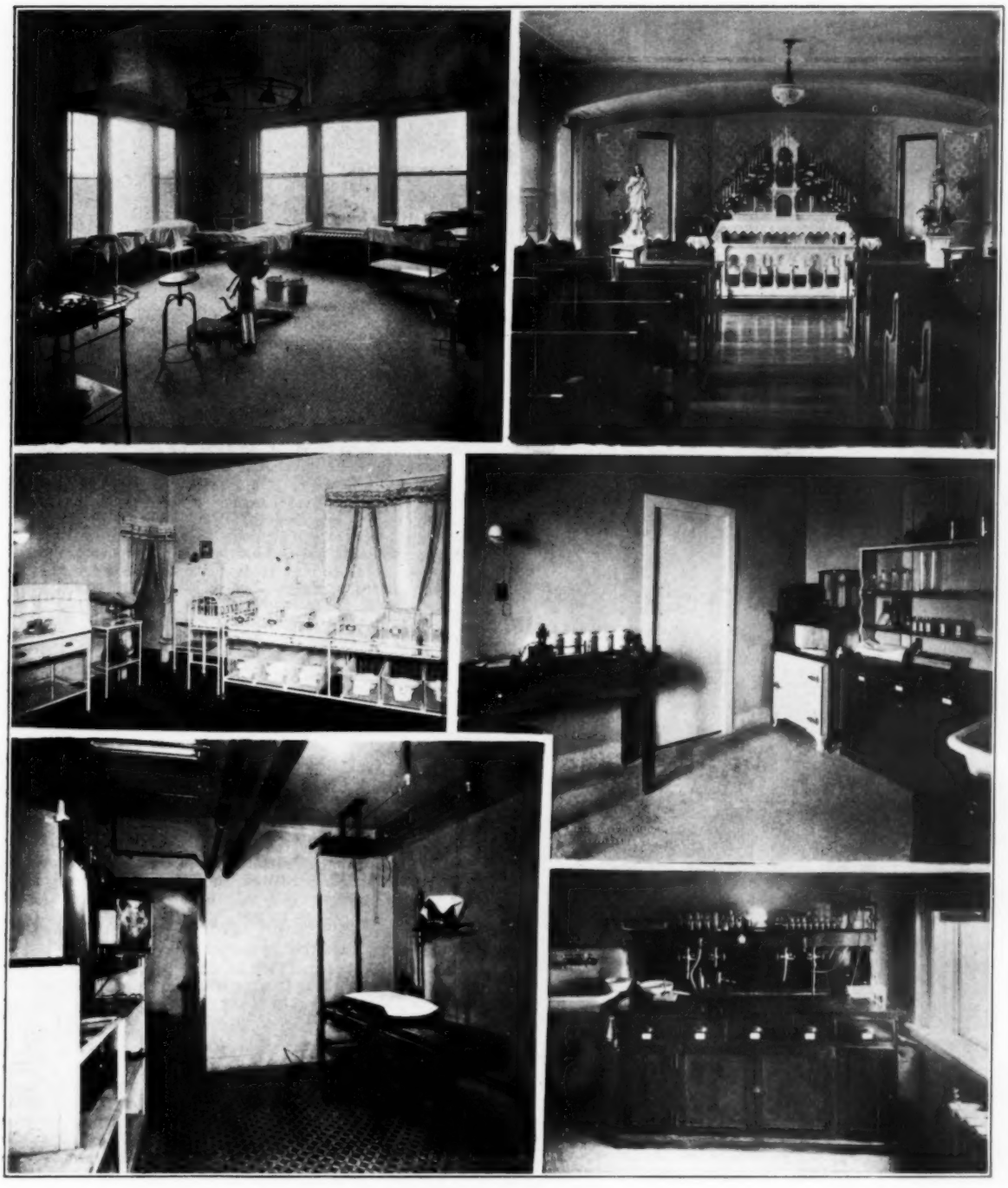
In order to keep pace with the times, a new up-to-date hospital was completed in 1923, at a cost of $250,000. It is a five-story brick structure of the "U" type of reinforced concrete, with stone trimmings. It is fireproof and has a capacity of 115 beds. Sixty of these are in private rooms, and the remaining ones are in wards.

All the furniture throughout the building is of steel, walnut finish. The main halls, bathrooms, and diet kitchens are finished in tile; the stairs, utility rooms and other halls are of terrazzo. On the ground floor which is level with the street are the main kitchen, diet kitchen, nurses' dining room, X-ray department and splint room, laundry, servants' dining rooms, demonstration room, storerooms and boiler room. On the first floor are main office, reception rooms, lecture hall, record room, chapel, eight private rooms, chaplain's suite, utility room. One wing of this floor is divided into a Sisters' dining room, recreation room, diet kitchen, bathroom, built-in closets, etc. The second floor has 24 private rooms which are used exclusively for surgical cases. Some of the rooms are equipped with private bath. The third floor has seven wards, holding three, four, five, six, and seven beds respectively. Medical, surgical, and children patients are cared for on this floor. The east wing of this floor is occupied by the operating department. In this suite are two major operating rooms, specialist room, delivery room, doctors' suite. The sterilizing room is located between operating rooms; separate scrub-up rooms adjoin all operating rooms. Instrument cabinets are of the built-in type. Everything in this department is arranged for convenience and efficiency.

Maternity cases are cared for on the fourth floor as are also medical cases. This floor is occupied by private rooms, one maternity ward, and nursery.

The nursery is very attractive with its complete equipment. It is not only beautiful but useful as many

STUDENT NURSES, ST. EDWARD'S MERCY HOSPITAL, FT. SMITH, ARK.



ST. EDWARD'S MERCY HOSPITAL, FT. SMITH, ARK.
Major Operating Room, Chapel, Nursery, One Room in the X-ray Department, and Two Views of the Laboratory

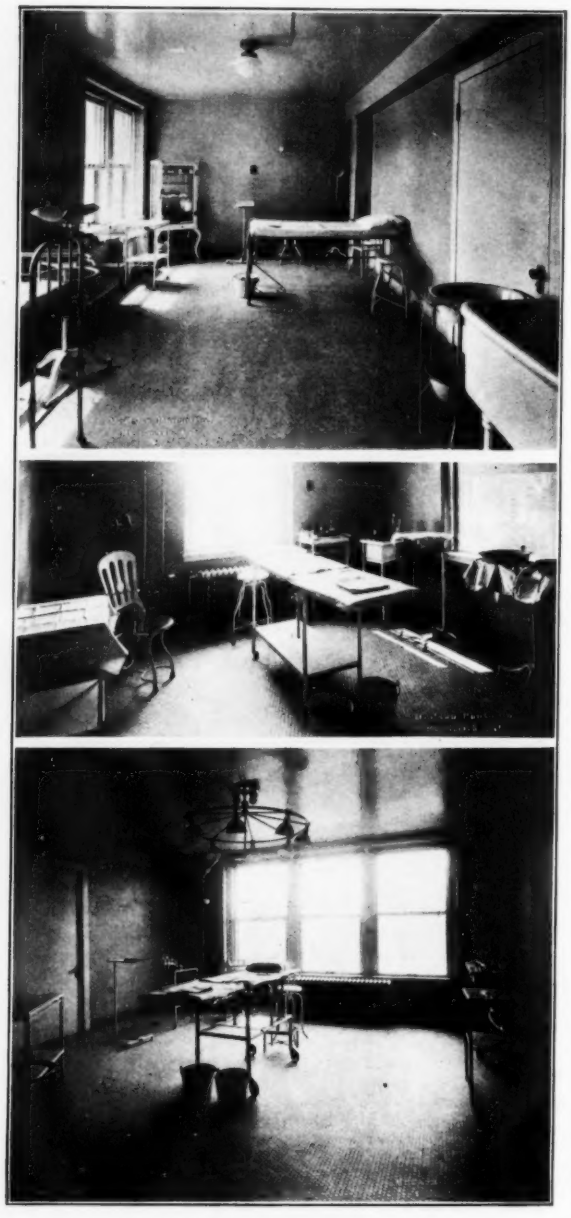
mothers are taken care of in the well-arranged maternity wing.

The laboratory has a wing on this floor, too. It has all modern equipment and presents a nice appearance. Attached is a room for metabolism tests, with every convenience.

Each floor of the hospital has a chart room, nurses' station, utility room, bath and linen rooms. The light system is used. When the patients' light is on, a light with a buzzer attached comes on at the nurses' station. In addition to these, this system is so arranged that a light comes on in each wing, diet kitchen, and main office. This arrangement is a great factor in having patients' calls answered promptly. An elevator of the push-button type connects each floor. There is also a dumb-waiter connecting floor diet kitchens with the main kitchen.

St. Edward's from the beginning has had marked success. This is due in a great measure to the splendid cooperation of the doctors and surgeons and the hospital guilds. The hospital has also an accredited training school for nurses. At the present there are 39 nurses in training. The old hospital was remodeled and furnished and makes an ideal home for the nurses. It has a fine recreational hall and splendid porches. The hospital has five porches too, on each floor, where convalescent patients may enjoy fresh air and sunshine.

NURSES' HOME, ST. EDWARD'S MERCY HOSPITAL, FT. SMITH, ARKANSAS



ST. EDWARD'S MERCY HOSPITAL
FT. SMITH, ARKANSAS
Top to bottom: Delivery Room, Specialists' Operating Room, and 2nd Operating Room

CONSTIPATION[1]

George K. Meynen, M.D., Consulting Surgeon to Mary Immaculate Hospital and Chief Surgeon, L.I.R.R.

Constipation is one of our most common troubles and probably in most instances is a self-made complaint. Civilization, the exactions of life, and our always being in a hurry, have much to do with this condition. It has been observed that the carnivorous or meat-eating animals, are not as prone to soft movements as the herbivorous or vegetable-eating animals. This is attributed in part to the cellulose found in vegetable matter, and fruits. If we observe the horse or the cow, we find that they are not given to constipation, while we, a supposedly intelligent race, are sorely afflicted.

While this is in part due to our large consumption of meat, it is also due to our civilized condition: We ride in motors and trolleys and do our marketing by 'phone. Our lives are busy and work calls us, and we neglect or forget to devote time to the item of bowel evacuation. The most natural time for bowel evacuation is after the partaking of food, and if one would obey this law of nature, by going immediately after breakfast, by the watch is possible, much could be accomplished in the way of prevention and cure.

We are all creatures of habit—let us cultivate this habit. Sedentary habits induce constipation. We should exercise; walking is excellent, but if not possible, we should make time for some or all of the "daily dozen." Of course there are other causes besides sedentry habits and neglect of routine, but I will mention only two: the cathartic habit, and the presence of piles.

We neglect nature's call and resort to cathartics. If this becomes a habit, we grow more and more a slave to catharsis until finally nature rebels and laxatives are our main reliance. This is an everyday observance. Give nature a chance. Piles cause pain or distress while defecating, and on this account induce the taking of laxatives. While this may soften the movement and relieve the discomfort, it aggravates the piles. We are setting up a sort of vicious circle, which will ultimately, if continued, end in chronic constipation. The piles should be removed by operation or otherwise, if not the habit of taking medicine grows and the constipation becomes more and more aggravated.

I am not going to give you any list of medicines for this condition—with proper care we should not require any—but rather urge upon you the thought that constipation is in great measure the result of habit, or perhaps better, the result of improper habits.

Exercise, regular habit, proper diet are essential. Eat fruit in the morning, less meat, plenty of vegetables, both raw and cooked, acquire the morning habit, exercise, and above all, remember that one can go three or four days without bowel movement, or longer, without detriment to health. Two or three teaspoonfuls of whole flaxseed, mixed with your cereal or bran at breakfast, is helpful and harmless. Give nature a chance.

---

[1]One of a series of health talks by Dr. Meynen who is consulting surgeon to Mary Immaculate Hospital, Jamaica, L. I., New York, and chief surgeon of the L.I.R.R. The article was sent to HOSPITAL PROGRESS through courtesy of Sister M. Eugenia.

The Management and Procedure in Obstetrics[1]

Henry Buxbaum, M.D., Instructor in Obstetrics, Northwestern University School of Medicine, Chicago, Ill.

THIS topic, embracing as it does the entire field of obstetrics, both normal and pathological and its component branches, viz: conception, pregnancy, labor, lactation, and involution, would necessitate quite a voluminous paper if given in detail. Therefore, it will be my purpose to give you the fundamentals and essentials of this subject in as brief a form as possible and commensurate with its importance.

Realizing that something is lacking in our present-day method of teaching and practicing obstetrics, which is proved by the extremely high and often unnecessary mortality and morbidity in this supposedly physiological function of reproduction, we have come to the conclusion that if we consider pregnancy a disease of nine months' duration and treat it as such, we will advance a long way toward Utopia in obstetrics.

Preventable Loss of Life

It is a sad commentary of facts, but nevertheless true, that approximately 25,000 mothers lose their lives annually from causes attributed to child bearing, as given in the death registration area of the United States. This does not take into consideration the thousands of young mothers who are left physical and mental invalids following their confinements.

We also glean from the same source that approximately 250,000 babies die annually in the United States before one year of age, 80 per cent of which deaths are attributed to conditions resulting from parturition. On closer analysis these figures reveal that about one woman out of every 175 who becomes pregnant, dies. This mortality, it may be of interest to know, has not varied to any extent in the past 20 years, remaining approximately the same in spite of the tremendous improvements made in asepsis and antisepsis, and also in spite of the rapid strides made in the perfection of obstetric diagnosis and technic.

The only solution for this serious problem is, as I see it, adequate, thorough, and complete prenatal obstetrics. By this only, can we hope to eliminate most of the deaths due to sepsis, eclampsia, and conditions existing before pregnancy. The patient should be advised to consult her physician as soon as she suspects she is pregnant, and every three weeks thereafter until the seventh month, and every two weeks from then on. On the first examination the physician should examine his patient thoroughly, both physically and gynecologically. This examination should entail a complete physical examination of the lungs and heart, also examination of the abdomen, pelvis, and lower extremities.

Importance of the Heart

The heart we know is especially important during pregnancy, as it bears most of the brunt during the developing of the child. If a heart is pathological at the onset of pregnancy, it may naturally develop into a dangerous complication, if left untreated. Past experiences have taught us that a mitral regurgitation—either functional or organic, if compensated, is not a very dangerous complication. Also a sinus arythmia and extra systoles are common during pregnancy, and especially during the latter part. Aortic lesions are not particularly dangerous if compensated, but all the other arythmias, dominant or nondominant, are dangerous entities, and the patient's condition depends directly upon how carefully they are watched and managed. The most dangerous of all cardiac lesions is mitral stenosis; therefore, a woman with this condition is a poor risk and must be carefully observed. If decompensation is already present, the patient should be sent to a hospital, put to bed, and digitalized until she is carried over her crisis. Fortunately, nature compensates for this defect, inasmuch as the majority of cardiopaths have normal rapid labor, due to the passive congestion of the parts.

Tuberculosis during pregnancy is necessarily a dangerous condition, especially if active, and the treatment here depends upon the activity of the lesion and the strength of the patient, being largely the treatment of tuberculosis in the nongravid person.

The gynecologic examination should consist of external and internal pelvimetry, abdominal palpation, and counting of the fetal heart tones, if audible. Pelvic examination should be made and treatment instituted if indicated. It is possible from this examination to give a fairly accurate prognosis of the type and mode of delivery which may be expected, also to make a definite diagnosis as to presentation and position of the child. By this type of examination only can we hope to avoid unnecessary operations and thereby definitely lower the risk of subsequent puerperal sepsis. Also, in some cases the necessity for doing a cesarean section may be suspected and in other cases may be avoided by proper treatment instituted early. This information we can only hope to obtain from this type of examination.

The doctor should also form a tentative opinion of the outcome of the case on this initial examination, and guide himself accordingly. Blood pressure readings and urinalysis must be done, and microscopic examination made if albumin is present in the urine. If the physician has any suspicion of a luetic infection, either from examination or history, he should not hesitate to take a Wassermann test. It is a standing rule with us that a Wassermann be taken on every patient who gives a history of having had one or more abortions or stillbirths.

The physician's advice and instructions to the patient should depend upon what his examination has revealed. The patient should be given written instructions on sanitation, hygiene, exercise, and diet in an effort to insure her full cooperation. At no time should the physician take anything for granted. Further, the patient should never be unduly alarmed, but every effort should be made to allay her fears in regard to the future. If serious instructions are necessary, the physician should give them in a positive but tactful manner. On her subsequent visits, the blood pressure should be taken, urine examined, and if a certain diet or exercise is indicated, she should be so informed. I have found it the best policy to take my patients into my utmost confidence which insures better cooperation than is otherwise possible.

Dieting Patients

If the patient's blood pressure has a tendency to go up, and if her urine shows traces of albumin, or if there are any symptoms of an impending toxemia, such as headaches, amblyopia, amaurosis, edema, epigastric pains, stupor, or rapid gain in weight, I send my patients to the hospital and put them on a low protein diet which is also salt free, or in other words, a hypertension diet; saline catharsis is given twice weekly. In this respect, it is interesting to note that when the blood pressure rises during the last weeks of pregnancy, it may be due to an increased activity of the thyroid gland, a fact which has been noticed by numerous observers in this field. There-

[1]Read at the 13th annual convention and 2nd annual clinical congress of the Catholic Hospital Association at Cincinnati, Ohio, June 18-22, 1928.

fore, the practice of basal metabolism readings during pregnancy, while it does no harm, may be of incalculable aid in handling a case. Also the administration of small doses of Lugol's solution over interrupted short periods of time has been found to benefit both mother and child. Those gravida that complain of palpitation, extreme nervousness, sweating, insomnia, and other symptoms of a psychostenic nature, whose basal metabolic rate is about normal, are immediately relieved of their symptoms and immeasurably benefited by the administration of this drug. Also the children who receive Lugol's through this method are less prone to the development of congenital goiter or cretonism. This is a suggestion especially to be considered in the so-called goiter districts.

If the patient runs a consistently low blood pressure, with a stationary weight or loss of weight, it is best to examine the patient closely to find out if there is any chronic condition existing. At the first examination, as a rule, I take the weight of the patient, using this for comparison on her subsequent visits. Also at the first visit I usually register my patient with the hospital in which she desires to be confined, for it is my belief that a hospital is the one and only proper place for a woman to have her baby. We have learned from an economic standpoint that it is no more expensive to be delivered in a hospital than at home, and it is infinitely safer.

While I do not believe it necessary to examine the patient's abdomen each time she calls, it is extremely important from a prognostic standpoint that this be done about four weeks before expected delivery of the child, and the descent of the head into the pelvis noted. Monroe Kerr of Glascow advises the pushing of the head into the inlet at this time to see if the head will engage, and if the head can be made to engage, it is fairly safe assurance that it will come through, and inversely if it will not engage, we must look forward to some difficulty at the time of labor, for it stands to reason that if the head will not come down and engage at the eighth month, it certainly will not at the end of the ninth month. It is also a good thing at this time, if we suspect or expect difficulties, to start preparing the mind of the patient for a cesarean section.

It is also a fact that if lightening occurs in the primipara three weeks before the onset of labor in a normal head and pelvis, we can feel fairly sure of a normal delivery, providing everything else is equal, but if it does not occur, then we know immediately that something is interfering with the normal descent of the head, either a disproportion, or maladaption of the head in the pelvis, or a placenta praevia, or some intrapelvic tumor is interfering with the normal mechanism of labor.

Though we are justified in terminating pregnancy after the fetus is viable, providing we have solid reasons to warrant such a radical procedure; on the other hand, it is best to temper justice with mercy and not be too hasty in our conclusions. In other words, a woman who is willing to bear the trials of pregnancy and labor, is entitled to the very best service scientifically possible, and any physician not adapted either by reason of temperament or training to render this service should not undertake to manage a case of this sort.

By giving this routine prenatal care to the patients, not only would we be doing a signal service to our communities by reducing the maternal and fetal mortality and morbidity, but also we would render it absolutely unnecessary for the lay public to pass any paternalistic obnoxious legislation controlling this field of medicine.

The patient should be instructed to go to the hospital where she is registered as soon as she notices any signs of impending labor, such as bloody show, pains, which are rhythmic in character and increasing in severity, or rupture of the membranes. On her arrival at the hospital she should be immediately sent to the labor room and not subjected to any cross-examinations by the receiving clerk, as all desired information should have been arranged for in advance. The patient should be bathed, shaved, and made comfortable, and if her hair is long, it should be braided. The nurse who takes this prospective mother in charge should be tactful in her manner and actions toward the patient and appease her fears, if she has any, as the majority of women, especially if it is their first baby, are terrified on entering the birthrooms, and, therefore, should be treated with much kindness, consideration, and diplomacy.

The Intern's Work

After this preparation is completed, the intern is notified and he should respond immediately, regardless of what time of the night it is, or the character of her pains, and examine his patient. This examination should consist of blood pressure, urinalysis, abdominal examination, external pelvimetry, if not already done, and a rectal examination. He should then do three things in particular, viz: First, inform the nurse as to the advisability of giving an enema; second, notify the attending physician of the progress of his patient; and lastly, record all his findings on a specially prepared obstetrical chart. The prenatal record of the physician should accompany the patient to the birthrooms so as to have on hand the facts regarding the physical condition of his patient throughout her pregnancy, as these facts may prove to be of considerable value in the handling of the case.

The patient should be kept in the labor room under close observation of both intern and nurse throughout her entire first state. She should be examined as often as her pains indicate. The fetal heart tones should be auscultated at least every thirty minutes or less and reported on her chart, and in those cases where the patient is having a long, protracted, difficult first stage and is becoming quite exhausted, ⅙ gr. morphine sulphate may be employed, providing, of course, that she is not expected to deliver before three hours after the injection is given. We have combined this alkaloid with 2 cc. of 50-per-cent solution magnesium sulphate with good results. The magnesium sulphate being synergistic, prolongs the action of the morphine. This is especially indicated when the woman is having regular pains every few minutes and is about 3 to 4 cm. dilated with a somewhat rigid external os. The danger of a narcotized baby is small if the narcotic is given at this early stage.

We have also found Gwathmey's rectal ether oil instillation to be efficacious in alleviating the pain of child bearing. This consists of giving a mixture of 2½ oz. of ether with 1½ oz. olive oil containing 20 gr. quinine hydrochloride and 45 mms. of alcohol. This mixture is warmed and given very slowly with rectal tube between pains, and the patient is asked to cooperate and not expel, if possible. We have found that a large majority of the women are relieved of some or most of their pain by this combination of methods.

I also wish to mention a common fault I find with most hospitals, being the idea that a woman during labor should not eat. If we stop to consider the fact that a woman during a long-drawn-out labor is burning up a great deal of energy and producing a large amount of fatigue bodies and lactic acid in her tissues, with a marked diminution in her alkaline reserve, we can readily understand the mechanism or production of acidosis in labor, and we know that acidosis is a formidable complication at this time, especially if an anesthetic is to be used later. Acidosis is a forerunner, or, in other words, a warning of an impending obstetrical shock, and should be avoided or minimized as much as possible. Therefore, at the

Chicago Lying-In Hospital it is the policy to feed the patient during labor, food especially rich in carbohydrates, such as orange juice, cereals, and even ordinary lump sugar.

If the mother and baby are both in good condition, it is best to treat all our cases with watchful expectancy of an intelligent character, being ready to help on a moment's notice if at any time the occasion demands it. Watchful expectancy, if employed ignorantly, may be disastrous to the mother or child or both, but if administered judiciously, will usually work out to the satisfaction of all concerned.

When the woman is ready to deliver, she should be moved to a large, airy, bright, clean delivery room. She should be again scrubbed and sprayed with 5 per cent mercurochrome solution, and then draped with sterile linens. It may even be a good plan to put a linen mask over the nose and mouth of the patient if she has a tendency to expectorate over the sterile field while bearing down. I do not favor putting the patient's legs in stirrups, for a normal delivery, but prefer that she lie on her back in a comfortable bed.

Watch Fetal Heart Tones

The fetal heart tones should now be watched more closely, for oftentimes the baby's heart tones will go bad when the head is on the perineum. I would suggest that the obstetrician have on his head a stethoscope during the entire second stage, even while he is scrubbed. A DeLee-Hillis stethoscope is constructed so that this is possible. Of course, the general procedure at this stage depends upon the conditions we find present in each individual case. If everything is progressing favorably and both mother and baby are in good condition, it is always best to let nature take its course, and allow the woman to deliver spontaneously. We do not favor any of the modern radical departures in promiscuous operative deliveries, for even in the most skillful hands they carry a higher mortality, especially fetal, than normal deliveries.

On the other hand, to be too conservative in some cases may actually be considered radical obstetrics. To illustrate: To treat conservatively a mother with a bad heart, case of eclampsia, placenta praevia, abruptio placenta, interuterine asphyxia, etc., during the second stage, would really be considered radical obstetrics. The reverse would also be true, for instance, a woman progressing normally with a baby in good condition should not be subjected to the hazards of indiscriminate forceps, prophylactic versions, or unnecessary cesarean sections. If we are too surgically inclined or if we have too large a general practice and cannot afford the time to allow nature to terminate a case normally, we should not attempt to do obstetrics.

In regard to routine episiotomy, I do not believe this procedure should come under the category of radical obstetrics but rather I consider it conservative obstetrics because, by this procedure, we are conserving pressure on the baby's head; we are shortening the last part of the second stage of labor; we are conserving the strength of the mother, and lastly, we are conserving her pelvic floor, and incidentally her future health, for after an episiotomy it is possible to restore her pelvic floor to its former condition, while after a laceration this may not be possible, due to the fact that even if she has had no visible external laceration, she may have a relaxation or submucous tearing of some of the fibers of the muscles composing the pelvic diaphragm.

The Kind of Anesthetic

In regard to anesthesia, ethylene gas is the anesthesia of choice. We use it during the entire second stage of labor with pains to an obstetric degree, and complete surgical anesthesia for repairs or forceps if necessary. However, while ethylene is probably the most perfect obstetrical anesthesia, it still has its disadvantages. First, it must be given by a well-trained anesthetist; second, it does not give the amount of relaxation that can be accomplished by ether, and third, many operators claim that oozing from the tissues is increased under ethylene. Therefore, it would seem that in a difficult delivery, and especially version, ether is the anesthetic of choice.

At this time I do not believe it would be amiss for me to advise against certain common obnoxious obstetrical maneuvers. We consider first under this heading, manual dilitation of the cervix, which, as Williams so aptly calls it, "manual laceration" of the cervix, as being the most serious offender, and may prove to be more harmful than good and should never be resorted to. Another form of poor obstetrics at this stage is to force the patient to bear down before the cervix is completely dilated, as this unnecessary procedure accomplishes nothing and tires the patient. Any unnecessary interference with the cervix is to be discouraged.

The membranes, if they have not ruptured spontaneously when the cervix is completely dilated, should be ruptured artificially as they have already accomplished their purpose and can be of no further value.

While delivering the patient it is best to avoid the temptation of repeated vaginal examinations or manipulations. The perineum can be protected by a rectal towel and an episiotomy done when the perineum starts distending. The cut should be made about 5 o'clock, that is, midway between the rectum and the left tuberosity of the ischium. This episiotomy should be deep enough to cut the septum and the levatorani muscle and should extend up to the left vaginal sulcus for about four centimeters. The episiotomy wound should be closed in the manner best suited to the operator. Nothing short of perfect should be the ultimate goal.

Do not under any circumstances try to deliver the shoulders by pulling on the head. This is one of the most common causes for the production of obstetrical paralysis or Erbs palsy. It is best to wait until the mechanism of labor itself forces the baby's shoulders down into either one of the obliques, after which the baby can be expelled by pressure on the abdomen from above.

Pituitrin Dangerous

Immediately after expulsion of the fetus, ½-1 ampule of obstetrical pituitrin should be given. Pituitrin given at any time previous to this is a dangerous procedure. At the Chicago Lying-In Hospital we seldom, if ever, resort to the use of pituitrin during the second stage of labor, for we realize that the drug is unstable and may be extremely harmful to both mother and child. Pituitrin and morphine are wonderful additions to the obstetric armamentarium, but unfortunately, both are too often abused. Unfortunately, it seems that those least able to handle any obstetrical complication when it arises, are the ones who most often use this drug.

The fundus of the uterus should be left severely alone until after the formation of the retroplacental blood clot, which is evidenced by the rising of the uterus into the abdomen, usually toward the liver; and then the placenta is expressed by simple pressure on the fundus of the uterus and not by traction on the cord. One ampule of aseptic ergot should now be given deep into the thigh and the placenta and membranes examined minutely for any pathology or tears. We should always try to limit the loss of blood, as hemorrhage is a cardinal predisposing factor toward the production of infection, therefore, it is advisable, if the severity of the hemorrhage demands it, to pack the uterus tightly with about ten yards of plain gauze.

If the delivery is of an operative nature, a routine internal examination of the uterus should be made under the strictest of aseptic precautions, and also of the vagina, for any lacerations or injuries. If the bleeding has been a little more profuse than normal, it is advisable to give 1,000 cc. normal saline solution in the breast or thighs immediately, and not wait for signs of shock to appear.

After the infant is expelled and before the cord is cut, the baby should be identified with a permanent tag which will not or cannot fall off, and the mother should be numbered to correspond. The baby's mouth and pharynx should be wiped out with the small finger of the gloved hand, as this method is less likely to cause abrasion of the tender mucosa of the baby, and is just as efficacious as the use of gauze. The baby is then wiped with a small towel, examined for defects, cord tied and severed, and the baby handed to the nurse to be put into its crib. Mercurochrome, 5 per cent, is used routinely on and around the umbilical stump of the cord. The baby is placed in a warm blanket and then in a warm crib with the head slightly lowered. The eyes of the baby should be Creded before leaving the delivery room.

Identifying the Baby

The identification of the baby is an extremely important part of the delivery, especially to foster the confidence of hospitals in the minds of the patients; therefore, as an adjunct to the usual methods of identifying the baby, I would suggest a method in vogue at the Chicago Lying-In Hospital, viz: a metal tag is attached to the cord tape and necessarily remains until the cord sloughs off; there is a number on this tag that corresponds to the numbers on the baby's wrist and the mother's wrist. We also take the footprints of all babies born at this institution, a copy of which is given the mother the day she leaves the hospital.

At this stage also permit me to warn against the unnecessary use of promiscuous conversation in the delivery room, or any conversation other than that pertaining to the case on hand. The patient is naturally somewhat excited and confused from the anesthetic and is more than likely to misinterpret remarks made at that time which may lead to some confusion later. Also I believe that as soon as the baby is born, an attempt should be made to inform the father of the event and the sex of the child, and, if the mother is conscious, she should be told the condition and sex of her child.

I would like to state that never under any circumstances should a scrubbed nurse and doctor be left alone in the delivery room, for it is never known when an emergency may arise whereby the services of an unscrubbed nurse would be valuable. Therefore, it is a definite rule at the Chicago Lying-In Hospital that an unscrubbed nurse be in attendance with a scrubbed nurse.

Coming back to the patient herself, the last thing that should be done to her before she is taken off the delivery table, is to massage the fundus of the uterus and expel any blood clots that may have collected there, as these clots on the fourth or fifth day if left there may become absorbed and produce a sapraemia. A vulvar pad and binder are now applied. The breast and nipples should be cleansed and breast binder donned before the patient leaves the delivery room. As a word of caution, the attendant should pay specific attention to covering the patient from her head to her toes for her journey down the corridor to her room. It is believed by a number of excellent internists that inhalation pneumonia from an ether anesthetic is far-fetched, but that in all probability these are exposure pneumonias contracted after the patients have left the birthrooms.

Postpartum Care Important

We now come to the postpartum care, which is just as important and sometimes more so, than the actual delivery. After the patient leaves the delivery room, the physician must realize that his obligation to the patient is really just beginning, and not ending, for it is his duty to see her safely through the puerperium and the baby through its first few weeks of life. The patient is put on a fairly liberal diet, except where an extensive perineorrhaphy has been done, and then is put on what is termed a perineorrhaphy diet, which is a nonstool or often constipating diet, so as to give the sutures a chance to heal without becoming infected. All patients are routinely given oil on the second day except in those who are on a perineorrhaphy diet, in which event they are given liquid petrolatum 1 oz. three times on the fifth day, an oil enema on the fifth night, and 1 oz. castor oil on the sixth morning. Each patient has her own individual bedpan during her stay in the hospital, which is cleansed with running lysol solution after its use each time, and sterilized in an autoclave after she is discharged from the hospital. The patient is put on her pan and irrigated three times daily and after every urination, with an external weak lysol douche. Ordinarily, enemas are given daily after the second day.

The patient is advised to move about freely in her bed after the first twelve hours and also to lie on her stomach twice a day for one half hour each time. This is advantageous for several different reasons, viz: it retards or prevents formation of phlebitis, pelvic or femoral, also it aids in involution of the bulky uterus back into a normal state and position. Further, by lying on the stomach as above described, lochia is not allowed to collect in the vault of the vagina; this precaution lessens the dangers of infecting the sutures.

The patient is allowed to sit up with back rest in bed on the fifth day. Sutures, if any, are removed on the eighth day. The patient is allowed out of her bed on the ninth day, walks on the tenth day, and on the eleventh day goes home. Special cases naturally require more individualistic treatment, the above being a general outline of the routine care.

In regard to nursing, the baby is brought to the mother eight hours after delivery and every four hours thereafter. If the nipples are inverted, they are brought out by an electric breast pump. If sore, albolin or benzoin is used. If cracked, a 1-per-cent solution of silver nitrate and a lead nipple shield is applied. If breasts are tense and painful, fluids are restricted, ice bags applied, and the electric breast pump used as a last resort.

A supplementary feeding should be given only when there is an insufficient quantity of the mother's milk present and not otherwise, as it is only reasonable to assume that the baby who is being fed by bottle will shirk its natural desire to nurse its mother. Our babies are always carried individually by the nurse to and from the mother, each in its own carrying blanket and never pushed in a cart with many other babies. Our specific objection to the cart is that while the nurse is delivering one baby to its mother, the rest of the babies are left without an attendant and usually in a drafty corridor where they are frequently subjected to the petting and handling of visitors who may be in the hall at the time. The baby is sponged daily. Eyes, ears, nose, and throat are not touched unless some condition exists that necessitates it.

Watch Temperature

If for any reason whatsoever the mother develops a temperature over 100 for two consecutive days, or temperature of 102 lasting over 12 hours, she is considered to be infected and is, therefore, isolated. It does not matter whether the temperature is due to sepsis, pyelitis,

bronchitis, or any other condition, she should be isolated to such a place where it will serve as protection for the rest of the puerpera, and also where she can receive more adequate treatment. It is not sufficient to remove her to a private room on the same floor; she should be sent off the floor entirely, preferably to a separate building, if possible. If the baby has any ophthalmia, specific or otherwise, pemphigus, impetigo, or thrush, it should be likewise isolated from the rest of the babies.

Before the patient leaves the hospital she should be brought into the nursery and instructed into the care of her child, also in regard to the feedings. She should also be specifically instructed to return to her physician for postpartum examination in six weeks. This examination is as fully important as the prenatal examinations and should be religiously done. The things to be observed at this examination are whether or not complete involution has occurred, not only of the uterus but of all of the external and internal genitalia. This postpartum examination can be thought of as a prenatal examination for her subsequent pregnancies.

If the uterus is larger and bulkier than it should be normally at this time, in other words, subinvoluted, it is wise to give the patient small doses of fluid extract of ergot and advise hot vaginal douches. If retrodisplacement is present, a suitable pessary should be inserted and knee-chest position inaugurated. The pessary is advantageous not only in replacing the uterus, but also in helping involution, as a displaced uterus, by interfering with return circulation in the pelvis, is conducive to passive congestion and pelvic stasis. The pessary should be removed after four to six weeks, cleansed, and if necessary, reinserted. If there are any erosions, ulcerations, eversion, cystic degenerations of the cervix present, linear cauterization should be resorted to, not only for its immediate effect but also for its subsequent beneficial action.

If we agree with Maricean that pregnancy is a disease of nine months' duration, and with Davis that 10 per cent of labors are pathological, and all labor potentially so, we will pay more attention to this important phenomena of reproduction. As previously mentioned, and it will bear repetition many times, every woman who is brave enough and willing to risk the dangers attending pregnancy and labor, should be given the best possible scientific care known in this twentieth century. When we consider the fact that the deaths which I previously mentioned, all occur among young women in the best years of their life, and when we consider the fact that 50 per cent of these deaths at least are avoidable, it puts a very tragic aspect on this sacrifice of human life.

To analyze still further, 50 per cent of these maternal deaths are due to sepsis, a condition that is largely preventable, as I have tried to prove to you. About 25 per cent of these deaths are due to conditions influenced by the kidneys, such as eclampsia, toxemias, nephritis, etc. Let me say in regard to this, that the Chicago Lying-In Hospital, in common with some of the largest maternity hospitals in the country, practically never has a patient of eclampsia with convulsions in any woman who has followed their prenatal care. Therefore, it can be seen that these deaths are mostly preventable. As far as I can see, the only excusable maternal deaths, therefore, would be the remaining 25 per cent.

In conclusion, I wish to say that the sins of omission carry as great a consequence as the sins of commission, and can be more easily avoided by a little more attention, a little more patience, and a little more application on our part. Fetal or maternal mortality or morbidity due to accident or coincidence is unavoidable, but any mortality or morbidity due to negligence is reprehensible and should be eliminated.

1928 GRADUATES, SCHOOL OF NURSING, ST. JOSEPH'S HOSPITAL, DENVER, COLO.

Ethylene as an Anesthetic[1]

John S. Lundy, M.D., Section on Anesthesia, The Mayo Clinic, Rochester, Minn.

ETHYLENE as an anesthetic has been a topic of general discussion for several years. (See Bib. Nos. 1, 2, 3, 8, 9, 12, 16, 19, 21-26, 31, 35-39, 41, 55, 59, 64, 66, 68, 69, 73, 75, 79, 83, 86, 87, 95, 97, 98, 117, 120-122, 125, 127, 130, 131, 133, 136, 139-141, 143, 148, 149, 151-153, 155, 163, 168, 169, 172, 174, 179). It is probably safe to say that when a good, new anesthetic is auspiciously introduced, the enthusiasts are likely to use it as a routine.[65] The prophecy that such use of ethylene would bring unpleasant results has been borne out, and many of its most ardent spokesmen have become as pessimistic as they previously were optimistic. The pendulum of popularity of ethylene[50] has swung from one extreme to the other as it has with almost every anesthetic agent. Conservative management will in time establish the proper indications for it as well as for other anesthetics.

To appraise a given anesthetic agent, one may well formulate certain standards by which to judge it.[159] Such arbitrary criteria must obviously bear on the ordinary methods in general use. The advantages to be gained by using special technics will be mentioned, but the principal object of this discussion is to estimate the comparative value of ethylene as it has been commonly used during the past five years.

Certain characteristics must necessarily be found in the ideal general anesthetic agent: (1) it must possess anesthetic properties (see Bib. Nos. 10, 27, 28, 32, 54, 56, 72, 101, 102, 110, 156, 169); (2) it must be soluble in blood and tissue (see Bib. Nos. 40, 71, 81, 132, 137, 138, 145); (3) it must be stable within the organism (or, if there is a chemical change, the products must not be toxic) (see Bib. Nos. 42, 93, 99, 16, 119, 142, 145, 147, 154, 173, 178), and pass through the body without chemical change; (4) it must be relatively inexpensive[6, 150]; (5) it must be noninflammable (see Bib. Nos. 13, 33, 60, 63, 67, 68, 70, 76, 94, 96, 118, 144, 158, 165, 175), and nonexplosive; (6) it must be convenient to handle (see Bib. Nos. 15, 20, 29, 129); (7) it must be easy to inhale during induction, and inhalation[11, 34, 147] must be quiet during maintenance; (8) it must produce relaxation[5, 89]; (9) it must not produce any immediate (see Bib. Nos. 92, 106, 108, 135, 146, 157, 160, 162, 164, 166), or remote untoward results (see Bib. Nos. 4, 17, 18, 51, 53, 58, 62, 80, 85, 91), and (10) it must leave a wide margin of safey (see Bib. Nos. 7, 14, 43, 52, 74, 109, 128), between paralytic action on the respiratory center and failure of the heart.

These ten properties are selected and arranged to convenience my discussing and presenting a bird's-eye view of ethylene as an anesthetic. From my past experience they would appear to be the ones essential to an ideal general anesthetic. Although it is highly improbable at present, we may in the future find such an agent. Its inherent properties might then differ in minor details but, on the whole, would be much as I have given them.

In the light of the literature and my own experience with ethylene, I shall consider each of the ten points in the order named, omitting many minor details.

Anesthetic Properties

Ethylene acts as an anesthetic on flowers,[30, 90] notably the sweet pea and the carnation, as well as on man and many other animals. It might easily have happened that the anesthetic property of ethylene would have been discovered accidentally in using the gas as an agent for artificial ripening of fruit.[88] Its anesthetic potency is high,[156] as it quickly induces and indefinitely maintains the anesthesia. The anesthetic margin is about as narrow for ethylene as for nitrous oxide, and consciousness is, therefore, rapidly regained.[104] Furthermore, the individual tolerance for ethylene apparently does not increase on repeated administrations, as it is often equally effective in subsequent administrations.

Anesthesia is induced in from fifteen to twenty seconds when ethylene is used alone as compared to from thirty to forty seconds when nitrous oxide has been used alone. During the period of maintaining surgical anesthesia, the oxygen in the mixture may be increased to 20 per cent or approximately the same as in air. Ethylene is in this respect more desirable than nitrous oxide, which must be reinforced by a certain degree of anoxemia in many cases.[47, 48, 49, 82] Ethylene, however, is less efficacious than acetylene, with which one may often use 40 per cent oxygen in deep anesthesia. It is an established fact that ethylene is amply effective in deadening pain at the time of operation.

Solubility in Blood and Tissue

The water and lipoid solubility of anesthetic agents are given much consideration in the various theories of narcosis, and their physiologic action may depend entirely on these physiochemical characteristics. The degree of solubility differs in the various anesthetics of today but they are all sufficiently soluble in blood and tissue.

A general anesthetic agent must be soluble in blood and tissue in order to produce general anesthesia in the absence of mechanical anoxemia, and the fact that a mixture of 80 per cent ethylene and 20 per cent oxygen maintains general anesthesia is evidence that it is sufficiently soluble in blood and tissue.

Chemical Stability

Ethylene apparently is chemically stable within the organism, passing through the body unchanged, and it has been repeatedly demonstrated that ethylene is as potent when reinhaled as had it never been used before. In this respect it is like ether and nitrous oxide. Chloroform, on the other hand, is not an ideal anesthetic agent, because it breaks down in the liver into toxic products which cause necrosis of the central portion of the lobules of the liver.[46] This untoward result appears some time after the anesthesia, and is, therefore, called "delayed chloroform poisoning."[45]

Alcohol, which is readily oxidized into harmless products in the body, is an example of the various substances that are unstable in the body and, in general, are inferior anesthetic agents. The physiologic function of hemoglobin, which is so markedly impaired in carbon monoxide poisoning, does not seem to be affected[61] by a good anesthetic. The field of blood chemistry will always be an important part of anesthesiology. While ethylene is a very reactive substance in the chemical laboratory, it is sufficiently stable within the organism for our purposes, although it does not possess the inherent stability of ether.

First Cost vs. Total Cost

Ethylene given the ordinary way is not as inexpensive as ether but is approximately on a par with nitrous oxide. An interesting method has recently been demonstrated, however, which reduces the total amount of gas used. In this country it is advocated by Jackson[77, 78] and by Waters[176, 177] in ethylene and nitrous oxide anesthesias. The method is one of continuous rebreathing of the anesthetic after a quantity of carbon dioxide has been removed from the expired ethylene mixture by passing it through soda lime, and adding sufficient oxygen to meet the metabolic needs. This method has been used independently in Europe in connection with acetylene anesthesia.

[1] Read at the 13th annual convention and 2nd annual clinical congress of the Catholic Hospital Association at Cincinnati, Ohio, June 19, 1928.

From the viewpoint of hospital administrators it has been argued, and probably with good reason, that the patient spends a shorter time in the hospital and the bedside nurse is more quickly released when ethylene is used for anesthesia instead of ether. Thus, a saving is effected which primarily was not in evidence. A community suffers inconvenience and even financial loss, although less noticeable than with a commercial organization, when any of its members are in the hospital. The community's financial burden is lightened by an increased efficiency in the handling of patients without an increase in the size or operating expense of the hospital, the maintenance of which may to some extent be dependent on contributions.

An unsuitable gas machine, or one which is not kept tight and in excellent condition, wastes gas. I have found proper equipment to be the most efficient means for reducing the expense, improving the quality of gas anesthesia, and increasing safety. The first cost of ethylene need not be considered prohibitive because in the end it is probably an economy.

Noninflammability and Nonexplosibility

The ideal general anesthetic must be noninflammable and nonexplosive, and ethylene does not meet this requirement. Nitrous oxide and chloroform are closer to the ideal in this respect than are ethylene, ether, or ethyl chloride. Nitrous oxide makes one of its greatest bids for safety and general usefulness on this ground. Experimentally, ethylene has about the same flash point as ether, but it has a wider inflammability range when mixed with air or oxygen. Explosions or fires with ethylene or ether will in time be minimized as more effective precautionary measures are advised and exercised and as the equipment is made more efficient.

Assuming, for the purpose of comparison, that the specific gravity of air is 1, there is a considerable difference between the specific gravity of ether (2.59) and that of ethylene (0.978). The excess ether vapor sinks to the floor, and is, therefore, below the plane of instrumental activity in the operating room. Etheylene, on the contrary, rises to the upper two thirds or three fourths of the room, where it comes in constant contact with the field of operation.

The physiochemical properties of ethylene are serious handicaps to its general use, making it highly inflammable and explosive. The indifference of surgeons and anesthetists to the danger of its use under certain circumstances, and their careless attitude toward all precautions advocated by authorities on the subject tend to place ethylene in disrepute and constitute hazards sufficiently grave to contraindicate its routine use.[103] A few probably avoidable accidents have, together with a few mysterious ones, brought it into disfavor in certain places, so that its use has been forbidden by some hospital and civil authorities. The price of safety is constant diligence and vigilance.

Convenience in Handling

Ethylene is almost as easily handled as nitrous oxide, but it is much more difficult to handle than ether or choroform. Like nitrous oxide, it must be compressed in a heavy iron cylinder, on account of its physical properties. The cylinder in turn must be attached to a more or less heavy mechanical device for regulating the flow of the gas to the patient. Ethylene is, however, much more easily and conveniently handled than acetylene, the latter requires still more extensive apparatus for satisfactory results. In hospital work, the handling of the former is not a hardship for the anesthetist. For short operations, when portability becomes the deciding factor, ethyl chloride is often used instead of a gas.

The successful administration of a gas depends to a large extent on the use of a mask sufficiently well fitting to exclude the air. The gentle application of the mask to the face requires skill and close attention on the part of the anesthetist. Ethylene must necessarily be mixed with oxygen, and the gas machine must be made to accomplish this admixture. Then and there added difficulties are encountered. Whether the inconvenience of handling ethylene is a serious disadvantage depends on circumstances and the ingeniousness of the anesthetist.

Ease of Inhalation

Ethylene is not particularly disagreeable to inhale, but is during induction more unpleasant than nitrous oxide. Its odor is no more unpleasant than that of chloroform or ethyl chloride, and is much more pleasant than that of ether. An anesthetic such as ethylene, agreeable to most surgeons and patients, tends to minimize the number of persons who are denied surgical intervention, since with its use the operative risk is lessened and the surgeon's prospects of successful service are rendered more favorable. The patient's fear of being anesthetized may be so lessened that the hazard of preoperative procrastination is avoided. A particularly good name in a community is usually gained by hospitals using anesthetics that are easy to take, and often the patient's decision as to where he prefers to undergo hospitalization is greatly influenced by this. A great deal of mental suffering as well as physical pain could be avoided by inducing anesthesia with a gas, regardless of what anesthetic is used to maintain unconsciousness.

Quiet respiration is of great advantage during the administration of an anesthetic. In this respect ethylene is not always ideal. The addition, however, of a small quantity of ether or the use of an airway may help to some extent, and the intratracheal or intrapharyngeal insufflation of the gas may eliminate labored respiration. An increased use of special methods may increase the usefulness of ethylene.

Relaxation

A comparison of the degree of relaxation produced by nitrous oxide, ether, or ethylene by substituting one for the other under otherwise equal conditions, shows that nitrous oxide produces little or no relaxation, while ether may produce profound relaxation by the open-drop method, and ethylene may produce about one third to one half the degree of relaxation obtained with ether.

I have found that carbon dioxide aids in the administration of anesthetics by gas machine.[111, 161] In calling attention to the use of carbon dioxide some time ago, I stressed its value in gas anesthesia. Haggard[57] has pointed to carbon dioxide as increasing the rate of absorption of ether[167] by deepening respiration, and in my experience this proves to be true.

Quiet respiration during surgical anesthesia is of great value, as it renders profound relaxation less important. The foregoing special methods permit quiet respiration during the administration of ethylene, which, therefore, now can more readily compete with ether in the field of upper abdominal operations.

In my experience one anesthetic is often preferred to another because it gives a greater degree of relaxation, and not because it anesthetizes any better. Ethylene in this respect has an advantage over nitrous oxide.

Untoward Results

Fortunately, ethylene has no apparent untoward or irritating effect on mucous surfaces.[123] In this respect it is more desirable than ether, and on a par with nitrous oxide. Nausea and vomiting not uncommonly follow ethylene anesthesia,[126] but are not nearly as severe as after ether, although more distressing than after nitrous oxide. Of the ordinary inhalation anesthetics, ether produces the most pronounced degree of postanesthetic prostration, while ethylene produces less[44, 171] and nitrous oxide still less. This is generally true both of children and

adults. Repeated anesthetizations at short intervals are not difficult in the absence of prostration, nausea, and vomiting.

Among the immediate untoward results of ethylene anesthesia are the excessive oozing of blood[170, 84] at the site of operation, in some patients, and the increased intracranial pressure in operations on the brain.

Anoxemia is the most frequent complication in ethylene as well as in nitrous oxide anesthesia, and it may bring the patient to a critical point. Cyanosis may, however, be avoided by keeping the color of the patient's skin a blood pink throughout the anesthesia. Ether may be added to maintain the desired degree of anesthesia, when a fairly high percentage of oxygen is necessary in the mixture. Cyanosis may be overcome by the administration of pure oxygen, by artificial respiration, or by a combination of both; also, of course, by the removal of an existing mechanical obstruction.

At one time a peculiar phenomenon was observed after the administration of deep ethylene anesthesia to patients suffering from exophthalmic goiter.[100, 115] A high temperature and a very rapid pulse rate (200) developed, which continued unabated for two or three days. This condition, very rare when sufficient oxygen is given, was relieved only by the use of the oxygen chamber. It is likely to be characteristic of any deep gas anesthesia with mechanical limitation of oxygen, as the condition of many patients makes them intolerant to oxygen limitation.

In studying the incidence of pulmonary complication following ether and ethylene-ether anesthesia for surgical procedures in the upper part of the abdomen,[114] I found ethylene to be superior except for operations on the gallbladder and its ducts.

Central necrosis of the liver has already been considered in connection with the instability of chloroform, and for this reason will not be discussed here. Under untoward results I have considered only those which one may hope to circumvent.

The general consensus of opinion is that fewer remote untoward results follow ethylene and nitrous oxide than ether. The circumstances under which ethylene and nitrous oxide are used probably affect the relative beneficial results, inasmuch as there is a tendency to substitute ethylene and nitrous oxide for ether if the patient is very sick. The infrequency of untoward effects after ethylene has caused many to attempt using it as a routine. I believe that some untoward results are unfairly ascribed to the use of ethylene.

Margin of Safety

There is a fairly wide margin of safety between paralysis of the respiratory center and failure of the heart for ethylene, nitrous oxide, and ether, while it is very narrow for ethyl chloride, and practically nil for chloroform. The popularity of an anesthetic agent should depend on a wide margin of safety.

Comment

Finally, it may be said that ethylene leaves much to be desired when considered from the ten viewpoints already presented. For routine use, it is obviously not as good as ether, while the equal of nitrous oxide or acetylene and better than chloroform or ethyl chloride. It must be acknowledged that there is no ideal routine anesthetic, and for this reason a variety of agents are invaluable in obtaining the best results during and after anesthesia.[134] Thus, ethylene holds a definite place in anesthesia,[105] at least for the present, and for certain cases it is the anesthetic of choice. It is especially valuable in balanced anesthesia,[112, 113] where small amounts of the several agents, morphine, local, ether, and gases, are used to produce anesthesia, relaxation, and quiet respiration with a minimum of immediate or remote untoward results.

Bibliography[2]

1. Adams, R. S.: My personal observations with ethylene. Current Res. Anesth. and Anal., 1925, iv, 157-161.
2. Aird, F. A.: Advantages and disadvantages of ethylene anesthesia in dentistry. Australian Jour. Dentistry, April, 1926.
3. Allen, C. I., and Murray, Mary: Ethylene-oxygen anesthesia; a report of 2,750 cases. Surg., Gynec., and Obst., 1927, xliv, 690-700.
4. Allen, L. R.: Ethylene anesthesia. Colorado Med., 1925, xxii, 327.
5. Allgeyer, E. E.: Report of 100 anesthetics administered with ethylene gas. New Orleans Med. and Surg. Jour., 1923-24, lxxvi, 383-387.
6. Aurelius, J. H.: Ethylene anesthesia; report on use at Ancker hospital. Minn. Med., 1925, vii, 559-562.
7. Baker, W. A.: The danger signs of ethylene-oxygen anesthesia. Current Res. Anesth. and Anal., 1925, iv, 105; 111.
8. Balfour, D. C., and Flynn, M. R.: Recent advances in surgery. Internat. Clin., 1924, ii, 172-190.
9. Bevan, A. D.: Ethylene gas anesthesia. Tr. Am. Surg. Assn., 1923, xli, 435-443.
10. Blomfield, J.: Anesthetics in practice and theory: a textbook for practitioners and students. London, 1922, 436 pp.
    book for practitioners and students. Chicago Med. Book Co., Chicago, 1923, 436 pp.
    respiratoires. La pression sanguine et le coeur isolé. Compt. rend. Soc. de biol., 1924, xci, 907-909.
12. Brown, W. E.: Preliminary report experiments with ethylene as a general anesthetic. Can. Med. Assn. Jour., 1923, xiii, 210.
13. Brown, W. E.: Explosibility of ethylene mixtures. Jour. Am. Med. Assn., 1924, lxxxii, 1039-1040.
14. Brown, W. E., and Henderson, V. E.: On ethylene as an anesthetic. Arch. internat. de pharmacod., 1923-1924, xxviii, 257-264.
15. Cabot, Hugh, and Ransom, H. K.: Ethylene as an anesthetic for general surgery. Ann. Surg., 1927, lxxxvi, 255-259.
16. Caine, A. M.: Ethylene anesthesia: An improvement but not perfection. Current Res. Anesth. and Anal., 1924, iii, 104-106; 120.
17. Caine, A. M., and Reynolds, Chapman: Electrocardiographic studies of the action of propylene and some other anesthetic gases. Proc. Soc. Exper. Biol. and Med., 1925-26, xxiii, 488.
18. Cannady, J. E.: Ethylene in poor risk cases. Am. Jour. Surg. (Suppl. Anesth.), 1925, xxxix, 67-69.
19. Caven, R. M.: Textbook of inorganic chemistry. London, Chas. Griffin & Co., 1917, v. 77.
20. Cheney, M. B., and Michalske, Arthur: II. The manufacture of cotton process ethylene. Current Res. Anesth. and Anal., 1925, iv, 252-256.
21. Chipman, C. N.: Ethylene; the new general anesthetic. Virginia Med. Month., 1926-27, liii, 245-248.
22. Christiansen, J. F.: Clinical experiences with ethylene-oxygen anesthesia in dentistry. Dental Cosmos, 1924, lxvi, 346-351.
23. Christiansen, J. F.: Clinical experiences with ethylene-oxygen anesthesia in dentistry. Jour. Am. Dental Assn., 1924, xi, 720-726.
24. Christiansen, J. F.: A third report on the use of ethylene-oxygen in dentistry. Jour. Am. Dental Assn., 1925, xii, 166-174.
25. Christiansen, J. F.: The comparative advantages of ethylene-oxygen and nitrous oxid-oxygen anesthesia. Current Res. Anesth. and Anal., 1927, vi, 9-16.
26. Cook, E. F.: Ethylene gas anesthesia, with a report of 168 cases. Hosp. Prog., 1925, vi, 282-287.
27. Cotton, J. H.: Anesthesia from commercial ether administration and what it is due to. Can. Med. Assn. Jour., 1917, vii, 769-775.
28. Cotton, J. H.: Cotton process ether and ether analgesia. Am. Jour. Surg. (Suppl. Anesth.), 1919, xxxiii, 34-43.
29. Cotton, J. H.: Some technicalities of research dealing with the purification of ether and the introduction of pure ethylene into the anesthetic field in 1917. Current Res. Anesth. and Anal., 1925, iv, 51-73.
30. Crocker, William, and Knight, L. I.: Effect of illuminating gas and ethylene upon flowering carnations. Botan. Gaz., 1908, xlvi, 529-576.
31. Da Costa, J. C.: Modern Surgery: general and operative. W. B. Saunders Company, Philadelphia. Ed. 9, 1925, p. 1218.
32. Davidson, B. M.: Studies of intoxication. III. The action of ethylene. Jour. Pharmacol. and Exper. Therap., 1925-26, xxvi, 27-32.
33. Davis, C. H.: Explosibility of ethylene. Jour. Am. Med. Assn., 1924, lxxxiii, 1607.
34. Davis, S. G.: Clinical experiences with ethylene anesthesia. Am. Jour Surg. (Suppl. Anesth.), 1924, xxxviii, 76-80.
35. Day, G.: Ethylene-oxygen anesthesia. Jour. Florida Med. Assn., 1924-25, xi, 139-144.
36. De Normandie, R. L.: Progress in obstetrics. Boston Med. and Surg. Jour., 1924, cxci, 771-776.
37. Doudall, W. T.: Eight hundred cases of ethylene as the preferred anesthetic. Surg. Jour., 1925-26, xxxii, 79-81.
38. Duncan, J. W.: Personal experiences with ethylene gas in surgical anesthesia. Nebraska Med. Jour., 1926, xi, 449-456.
39. Fairlie, H. P.: "Ethylene anaesthesia." Brit. Jour. Anaesthesia, 1928, v, 154-157.
40. Fantus, Bernard: The technic of medication. Press of the American Medical Association, Chicago, 1926, p. 83.
41. Foy, George: Anaesthetics, ancient and modern. London, Baillière, Tindall and Cox, 1889, p. 70.
42. Fränkel, Sigmund: Die Arzneimittel-synthese. Berlin, Julius Springer, Ed. 5, 1921, p. 471.
43. Goldman, Aaron, and Goldman, J. D.: Practical and theoretical considerations of gas-oxygen anesthesia, with special reference to nitrous oxid, ethylene and acetylene with oxygen. Am. Jour. Surg. (Suppl. Anesth.), 1924, xxxviii, 114-117.

[2]Practically complete to April 1, 1928.

44. Goldman, I. H.: A few remarks about ethylene. Virginia Med. Month., 1925-26, lii. 115.
45. Graham, E. A.: The resistance of pups to late chloroform poisoning in its relation to liver glycogen. Jour. Exper. Med., 1915. xxi, 185-191.
46. Graham, E. A.: Late poisoning with chloroform and other alkyl halides in relationship to the halogen acids formed by their chemical dissociation. Jour. Exper. Med., 1915, xxii, 48-75.
47. Greene, C. W.: The oxygen and nitrous oxide content of the blood of dogs during nitrous oxide anesthesia. Jour. Pharmacol. and Exper. Therap., 1924, xxiii, 158-159.
48. Greene, C. W., and Currey, H. M.: The respiratory gas percentages during nitrous oxid anesthesia in dogs. Arch. Int. Med., 1925, xxxv, 371-378.
49. Greene, C. W., and Currey, H. M.: The distribution of nitrous oxid and oxygen in the blood of dogs during gas anesthesia. Arch. Int. Med., 1925, xxxv, 379-388.
50. Guedel, A. E.: The place of ethylene in anesthesia. Current Res. Anesth. and Anal., 1926, v, 86-87.
51. Guthrie, Donald: Ethylene and oxygen anesthesia in general surgery. Current Res. Anesth. and Anal., 1926, v, 214-215.
52. Guthrie, Donald: The safeties of ethylene anesthesia. Surg., Gynec., and Obst., 1926, xliii, 703-704.
53. Guthrie, Donald: Ethylene anesthesia, use of in traumatic surgery. Internat. Jour. Med. and Surg., 1927, xi, 55-57.
54. Gwathmey, J. T.: Laboratory and clinical experiments with ethylene and other hydrocarbon gases. Brit. Jour. Anaesthesia, 1923-24, i, 108-112; Am. Jour. Surg. (Suppl. Anesth.), 1924, xxxviii, 37-39.
55. Gwathmey, J. T.: Anesthesia. New York, Macmillan, Ed. 2, 1924, 711-731.
56. Gwathmey, J. T.: Ethylene and preliminary medication. Arch. Surg., 1925, x, 568-578.
57. Haggard, H. W.: The absorption, distribution and elimination of ethyl ether. I. The amount of ether absorbed in relation to the concentration inhaled and its fate in the body. Jour. Biol. Chem., 1924, lix, 737-751.
58. Harrington, S. W.: The surgical treatment of pulmonary suppuration. Jour. Am. Med. Assn., 1926, lxxxvii, 1200-1206.
59. Hastreiter, R. F.: Ethylene anesthesia: some deductions following its use in a series of 100 cases. Current Res. Anesth. and Anal., 1926, v, 254-255.
60. Heaney, N. S.: Ethylene-oxygen anesthesia in obstetrics and gynecology. Surg., Gynec., and Obst., 1924, xxxviii, 692-694.
61. Heaney, N. S.: Ethylene and oxygen anesthesia for gynecological and obstetrical work. Am. Jour. Obst. and Gynec., 1924, viii, 416-419.
62. Heaney, N. S.: Ethylene in obstetrics. Jour. Am. Med. Assn., 1924, lxxxiii, 2061-2062.
63. Heidbrink, J. A.: The principles and practice of administering nitrous oxide-oxygen and ethylene-oxygen. Current Res. Anesth. and Anal., 1926, v, 169-187.
64. Henderson, R. G.: Ethylene-oxygen anesthesia. Am. Jour. Surg. (Suppl. Anesth.), 1925, xxxix, 45.
65. Henson, E. B.: Ethylene, its uses as a routine anesthetic. The West Virginia Med. Jour., January, 1924, 9 pp.
66. Herb, I. C.: Ethylene: notes taken from the clinical records. Current Res. Anesth. and Anal., 1923, ii, 230-232.
67. Herb, I. C.: Explosions of anesthetic gases: a method for the control of electrostatic conditions. Jour. Am. Med. Assn., lxxxv, 1788-1790.
68. Herb, I. C.: Further clinical experiences with ethylene-oxygen anesthesia. Current Res. Anesth. and Anal., 1927, vi, 258-262.
69. Hermann, Ludimarus: Lehrbuch der experimenteflen Toxicologie. Berlin, A. Hirschwald, 1874, 101-276.
70. Hewer, C. L.: Ethylene anesthesia, with observations upon 120 administrations. Am. Jour. Surg. (Suppl. Anesth.), 1925, xxxix, 119-122.
Lancet, 1925, i, 173-175.
71. Hewer, C. L.: The present status of ethylene as an anesthetic. Brit. Jour. Anaesthesia, 1925-26, iii, 174-177.
72. Hewitt, F. W.: Anaesthetics and their administration. Ed. 4, London, Macmillan and Company, 1912, p. 468.
73. Hill, Leonard: Circulatory changes in anesthesia and the uses of oxygen. Current Res. Anesth. and Anal., 1927, vi, 1-8.
74. Hooper, C. W., and Gwathmey, J. T.: Preliminary medication in general anesthesia with special reference to the margin of safety and postoperative lung lesions. Am. Jour. Surg., 1927, iii, 598-601.
75. Horsley, J. S., Jr.: Ethylene-oxygen anesthesia: a report of 116 anesthesias. Virginia Med. Month., 1924, l, 822-828.
76. Horsley, J. S., Jr.: Further observations on ethylene oxygen anesthesia: a report of 450 cases. Virginia Med. Month., 1924, li, 476-481.
77. Jackson, D. E.: The pharmacological action of nitrous oxide. Jour. Lab. and Clinical Med., 1915-16, i, 644-661.
78. Jackson, D. E.: The employment of closed ether anesthesia for ordinary laboratory experiments. Jour. Lab. and Clinical Med., 1916-17, ii, 94-102.
79. Johnstone, G. A.: Advantages of ethylene-oxygen as a general anesthetic. California and Western Medicine, 1927, xxvii, 216-218.
Current Res. Anesth. and Anal., 1927, vi, 186-188.
80. Johnston, R. L., and Ivy, A. C.: Contributions to the physiology of gastric secretion. XI. The effect of ethylene anesthesia on gastric secretion and motility. Am. Jour. Physiol., 1926, lxxviii, 104-109.
81. Jones, A. P.: Ethylene anesthesia. Virginia Med. Month., 1925, lii, 589-590.
82. Jones, W. I.: The oxygen content of the blood stream under ether, nitrous oxid-oxygen and ethylene-oxygen anesthesia. Current Res. Anesth. and Anal., 1925, iv, 25-28.
83. Jones, W. I.: General anesthesia in the practice of exodontia. Dental Items Int., 1925, xlvii, 604-606.
84. Journal of the American Medical Association. Correspondence, Strauss, D. C., and Rubin, H. H., "The Coagulation time in ethylene anesthesia." 1926, lxxxviii, 586.
85. Journal of the American Medical Association: Chemical examination of ethylene for anesthesia. Report by A. M. A. Chemical Laboratory. 1927, lxxxviii, 322-323.
86. Journal of the American Medical Association. Ethylene—II. Report by A. M. A. Chemical Laboratory. 1927, lxxxix, 451.
87. Journal of the American Medical Association. Ethylene—III. Report Chemical Laboratory of the A. M. A. 1928, xc, 1444.
88. Journal of the American Medical Association. Artificial ripening of fruits by ethylene. 1927, lxxxix, 792-793.
89. King, E. L.: Ethylene in obstetrics. Am. Jour. Obst. and Gynec., 1925, ix, 835-837.
90. Knight, L. I.: Toxicity of smoke. Bot. Gaz., 1913, lv, 337-371.
91. Kreiselman, J., and Kane, H. F.: The use of ethylene in obstetrics; a report of 85 cases. Surg., Gynec. and Obst., 1926, xliii, 389-392.
92. Leake, C. D.: The effect of ethylene-oxygen anesthesia on the acid-base balance of blood (a comparison with other anesthetics). Jour. Am. Med. Assn., 1924, lxxxiii, 2062-2065.
93. Leake, C. D., and Hertzman, A. B.: Blood reaction in ethylene and nitrous oxid anesthesia. Jour. Am. Med. Assn., 1924, lxxxii, 1162-1165.
94. Lewis, W. B., and Boehm, E. F.: A simple method of eliminating danger of explosion due to static spark in gas-oxygen apparatus. Jour. Am. Med. Assn., 1925, lxxxiv, 1417.
95. Lipschitz, Werner: Narkotica, schlafmittel und die Modeströmungen ihrer Anwendung. Klin. Wchnschr., 1928, vii, 913.
96. Luckhardt, A. B.: The potential dangers attendant on ethylene-oxygen anesthesia. Jour. Am. Med. Assn., 1924, lxxxii, 1603-1604.
97. Luckhardt, A. B.: Ethylene. Jour. Am. Med. Assn., 1924, lxxxiii, 2060-2061.
98. Luckhardt, A. B.: Das Athyline als Beträubungsmittel. Klin. Wchnschr., 1925, iv, 739-742.
99. Luckhardt, A. B.: Bodily reactions under ethylene-oxygen anaesthesia. Brit. Jour. Anaesthesia, 1927, v, 17-19.
100. Luckhardt, A. B.: Sundry remarks on ethylene-oxygen anesthesia. Current Res. Anesth. and Anal., 1928, vii, 12-16.
101. Luckhardt, A. B., and Carter, J. B.: The physiologic effects of ethylene: a new gas anesthetic. Jour. Am. Med. Assn., 1923, lxxx, 765-770.
102. Luckhardt, A. B., and Carter, J. B.: Ethylene as a gas anesthetic. Jour. Am. Med. Assn., 1923, lxxx, 1440-1442.
103. Luckhardt, A. B., and Kretschmer, H. L.: Ethylene anesthesia in genito-urinary surgery. Jour. Urol., 1924, xi, 415-424.
104. Luckhardt, A. B., and Lewis, Dean: Clinical experiences with ethylene-oxygen anesthesia. Jour. Am. Med. Assn., 1923, lxxxi, 1851-1857.
105. Luckhardt, A. B., and Lewis, Dean: Ethylene-oxygen anesthesia. Sei-I-Kwai Med. Jour., 1924, xliii, 1-19.
106. Lundy, J. S.: Ethylene and oxygen as an anesthetic for infants. Jour. Am. Med. Assn., 1924, lxxxii, 448-449.
107. Lundy, J. S.: The comparative value of ethylene as an anesthetic. Jour. Am. Med. Assn., 1924, lxxxiii, 350-355.
108. Lundy, J. S.: Ethylene; its value in relation to other anesthetic agents. Northwest Med., 1924, xxiii, 126-130.
109. Lundy, J. S.: Anesthesia by nitrous oxid, ethylene, carbon dioxid, and oxygen for dental operations on children. Dental Cosmos, 1925, lxvii, 906-909.
110. Lundy, J. S.: The administration of ethylene-oxygen. Iowa State Med. Soc., 1925, xv, 371-373.
111. Lundy, J. S.: Carbon dioxide as an aid in general anesthesia. Jour. Am. Med. Assn., 1925, lxxxv, 1953-1955.
112. Lundy, J. S.: Balanced anesthesia. Minn. Med., 1926, ix, 399-404.
113. Lundy, J. S.: Balanced anesthesia and splanchnic block. Surg. Clin. N. Amer., 1926, vi, 1385-1395.
114. Lundy, J. S.: Incidence of pulmonary complications, following ether and ethylene-ether anesthesia for surgical procedures in the upper abdomen. Med. Jour. and Rec., 1926, cxxiv, 87-93.
115. Lundy, J. S.: Experiences with anesthesia in 1925. Current Res. Anesth. and Anal., 1927, vi, 38-42.
116. Lundy, J. S., and Osterberg, A. E.: The chemistry of analgesics and general anesthetics. Current Res. Anesth. and Anal. Current Res. Anest. and Anal., 1928, vii, 141-151.
117. McKesson, E. I.: Ethylene-oxygen—the new anesthetic. Toledo Technical Appliance Co., February 1, 1924.
118. McKesson, E. I.: How can we eliminate static from operating rooms to avoid accidents with anesthetics? Brit. Jour. Anaesthesia, 1925-26, iii, 178-181.
119. MacNider, W. deB.: The effect of general anesthetics on the organism as a whole. Current Res. Anesth. and Anal., 1926, v, 209-211.
120. Malisoff, William, and Egloff, Gustav: Ethylene. Jour. Physical Chemistry, 1919, xxiii, 65-138.
121. Mangus, M. L.: Ethylene-oxygen anesthesia. Hosp. Prog., 1926, vii, 387-388.
122. Med. Press and Circular, Current Topics, August 10, 1921, 103.
123. Meeker, W. R., and Hines, Mary: Anaesthesia at the Mayo Clinic. Brit. Jour. Anaesthesia, 1924-25, ii, 13-35.
124. Meyer, H. H., and Gottlieb, Rudolf: Die experimentelle Pharmokologie. Berlin and Wien, 1910.
125. Meyer, Victor, and Jacobson, Paul: Lehrbuch der organischen Chemie, Leipzig. Ed. 2, 1907, i, 836.
126. Miller, G. H.: The effects of general anesthesia on the muscular activity of the gastro-intestinal tract; a study of ether, chloroform, ethylene, and nitrous-oxide. Jour. Pharmacol. and Exper. Therap., 1926, xxvii, 41-59.
127. Miller, H. W.: Ethylene anesthesia: its indications in surgery and obstetrics. Chin. Med. Jour., 1927, xli, 935-940.
128. Minnesota Medicine: Ethylene Anesthesia, 1924, vii, 563-564.
129. Moore, I. R.: Improvement in packages for ethylene. October 5, 1875, No. 168-340.
130. Moose, S. M.: Recent clinical researches with ethylene-oxygen anesthesia for prolonged oral surgical operations. Pacific Dental Journal, May, 1926.
131. Moots, C. W.: The use of ethylene for general anesthesia. U. S. Nav. Med. Bull., 1924, xx, 429-431.
132. Moravec, E. L.: Ethylene anesthesia in dental and general surgery. Jour. Am. Dental Assn., 1927, xiv, 671-674.
133. Moser, Ludwig, and Lindinger, Franz: Preparation of ethylene. Monatsch., 1923, xliv, 141-150.

134. Muller, G. P.: The changing status of anesthetics. Ann. Surg., 1927, lxxxvi, 244-250.
135. Nelson's loose-leaf living surgery. Thomas Nelson and Sons, New York, 1927, i, 509, Plate ii, p. 532.
136. New and nonofficial remedies. American Medical Association, Chicago. 1928, 51-52.
137. Nicloux, Maurice, and Yovanovitch, Alexandre: L'anesthésie par l'éthylène. Dosage de l'anesthésique dans le sang. Compt. rend. Soc. de biol., 1925, xciii, 1653-1656.
138. Nicloux, Maurice, and Yovanovitch, Alexandre: Répartition de l'éthylène entre les globules et la plasma in vitro et aucours de l'anesthésie. Comft. rend. Soc. de biol., 1925, xciii, 1657-1658. abs. Jour. Am. Med. Assn., 1926, lxxxvi, 988.
139. Norris, J. F.: The principles of organic chemistry. New York, McGraw-Hill Book Co., Ed. 2, 1922, 47-54.
140. Norris, L. D.: A comparison of nitrous oxide and ethylene anesthesia. West Virginia Med. Jour., 1925, xx, 580-590.
141. Nunneley, Thomas: On anaesthesia and anaesthetic substances generally, being an experimental inquiry into their nature, properties and action, their comparative value and danger, and the best means of counteracting the effect of an overdose. Tr. Prov. M. and S. Assn., London, 1849, xvi, 167-381.
142. Oberhelman, H. A., and Dyniewicz, H. A.: A metabolism study of ethylene anesthesia. Jour. Am. Med. Assn., 1925, lxxxiii, 2012-2014.
143. Ohio Chemical Company: Ethylene, the newest general anesthetic.
144. Ohio Chemical and Manufacturing Company: Static electricity in anesthesia apparatus. 1924.
145. Osterberg, A. E.: Anesthesia from the standpoint of the biochemist. (In press.)
146. Papin, E.: Ethylene anesthesia in urology. Tr. French Congress Urologists. 1925.
147. Papin, E. and Ambard, L.: Anésthesie par l'éthylène. Presse Méd., 1924, i, 133-134.
148. Patton, J. M.: Anesthesia and anesthetics, general and local. Chicago, Cleveland Press, Ed. 3, 1910, 165.
149. Pickard, R. J.: The administration of ethylene-oxygen anesthesia. Current Res. Anesth. and Anal., 1927, vi, 51-55.
150. Plass, E. D., and Swanson, C. N.: Ethylene in obstetrics. Jour. Am. Med. Assn., 1926, lxxxvii, 1716-1719.
151. Poe, J. G.: General anesthesia, a textbook for students and practitioners, of the art of anesthesia. Dallas, 1926, 92-98.
152. Prov. M. and S. J., February 12, 1849, 98.
153. Prov. M. and S. J., Leeds, March 2, 1849, 138.
154. Reynolds, Chapman: Comparative studies of propylene, ethylene, nitrous oxide, and ether. Jour. Pharmacol. and Exper. Therap., 1926, xxvii, 93-99.
155. Richter, Victor von: Organic chemistry. Ed. 2. Philadelphia, P. Blakiston's Son & Co., 1913, i, 80.
156. Riggs, L. K.: Anesthetic properties of the olefin hydrocarbons, ethylene, propylene, butylene, and amylene. Jour. Am. Pharm. Assn., 1925, xiv, 380-387.
157. Rosenthal, S. M., and Bourne, Wesley: Effect of anesthetics on hepatic function. Jour. Am. Med. Assn., 1928, xc, 377-379.
158. Salzer, Moses: A method of eliminating the danger of explosion in the use of ethylene. Jour. Am. Med. Assn., 1927, lxxxviii, 315.
159. Seybold, J. W.: A comparison of nitrous oxide-oxygen and ethylene-oxygen anesthesia in office practice. Current Res. Anesth. and Anal., 1926, v, 39-40.
160. Sherman, W. O., Swindler, C. M., and McElroy, W. S.: Carbon monoxide poisoning following ethylene anesthesia. Jour. Am. Med. Assn., 1926, lxxxvi, 1765-1766.
161. Sherman, W. O., Swindler, C. M., and McElroy, W. S.: Carbon monoxide poisoning following ethylene anesthesia; final report. Jour. Am. Med. Assn., 1927, lxxxviii, 1228-1231.
162. Shipway, F. E.: Acetylene, ethylene, propylene. Lancet, 1925, i, 1126-1130.
163. Simpson, J. Y.: Anaesthesia, hospitalism, hermaphroditism. Vol. ii. Edinburgh, A. and C. Block, 1871-72.
164. Sise, L. F.: Ethylene. Boston Med. and Surg. Jour., 1925, excii, 287-291.
165. Sise, L. F.: Ethylene: uses and precautions. Surg. Clin. N. Amer., 1926, vi, 703-710.
166. Sise, L. F.: Ethylene vs. nitrous oxid: a statistical study of the circulation. Current Res. Anesth. and Anal., 1927, vi, 17-20.
167. Sise, L. F.: Regulation of carbon dioxid during inhalation anesthesia. Surg. Clin. N. Amer., 1928, viii, 201-207.
168. Smith, J. and Hoskins, A.: An experiment on the effect of inhalation of ethylene. Jour. Hyg., 1901, i, 123.
169. Stehle, R. L. and Bourne, W.: The anesthetic properties of pure ether. Jour. Am. Med. Assn., 1922, lxxix, 375.
170. Strauss, D. C., and Rubin, H. H.: The coagulation time in ethylene anesthesia. Jour. Am. Med. Assn., 1927, lxxxviii, 310-311.
171. Thompson, H. A.: Ethylene anesthesia, with report of experiences in 400 administrations. Current Res. in Anesth. and Anal., 1925, iv, 377-384.
172. Thorpe, T. E.: Dictionary of applied chemistry. London, Longmans Green & Co., 1921, Ed. 5, ii, 674.
173. Trout, H. H.: Blood changes under ethylene anesthesia. Ann. Surg., 1927, lxxxvi, 260-267.
174. United States, The Dispensatory of the: Wood, G. B., Ed. 21, 1926, iv, LaWall, C. H., p. 1295.
175. Wardell, C. H., Jr.: Minimizing the fire and explosion hazard of anesthetic agents. Hospital Progress, Vol. 9, No. 9.
176. Waters, R. M.: Clinical scope and utility of carbon dioxide filtration in inhalation anesthesia. Current Res. Anesth. and Anal., 1924, iii, 20-22; 26.
177. Waters, R. M.: Advantages and technic of carbon dioxide filtration with inhalation anesthesia. Current Res. Anesth. and Anal., 1926, v, 160-162.
178. Yates, J. L. and Raine, Forrester: The untoward effects of narcotics and anesthetics upon robust and handicapped patients. Ann. Surg., 1928, lxxxvii, 124-129.
179. Young, William: Observations on recent surgery in Britain and America. New Zealand Med. Jour., 1928, xxvii, 78-86.

Health Inventoriums and the Hospitals[1]

Franklin H. Martin, M. D., Chicago, Ill.
Director-General, American College of Surgeons.

IT is no longer a doubt that there is in progress an irresistible movement toward preventive medicine in the conservation of personal health, to supplement the practice of purely curative medicine. This movement is distinct from organized public health, which in the last quarter century has been increasingly successful in providing to the masses proper sanitary, hygienic, and special health measures. These public health activities have been carried forward through the agency of public health officials—salaried physicians, sanitary engineers, laboratory technicians, nurses, etc.

This, a *personal health movement,* properly comes under the jurisdiction of the independent practitioner of scientific medicine, the personal physician, who is trained both in preventive measures and in curative therapeutics.

PART I

Inventoriums to Promote Periodic Health Examinations

The following suggested plan was submitted recently to a limited group of hospitals selected at random from the approved hospital list of the American College of Surgeons:

"Since the beginning of medicine, practitioners, patients, and prospective patients have asked the question: 'Why not keep people well instead of waiting until they become ill before extending medical care to them'?

"At the present time many organizations are attempting to solve this problem by urging each and every individual to have a periodic health examination.

"A number of these organizations urge a periodic examination to protect the public from a particular disease—among them the National Tuberculosis Association, the American Child Health Association, the American Society for the Control of Cancer, and the American Heart Association. The American Medical Association, state and county medical societies, the American College of Surgeons, and the Gorgas Memorial have been carrying on an active campaign for better health, with the slogan that each individual should have a **thorough** and **complete periodic health examination** by his personal physician which would reveal to him any or all preventable diseases in their early stages.

"This disinterested campaign on the part of the organized profession has attracted attention and created a strong public opinion favorable to the idea. The plans are being aided by the well-tried methods of ethical and dignified publicity in the lay press, magazines, personal, and public health addresses, and radio talks, and by the establishment of diagnostic clinics.

"Undoubtedly in a few years a majority of our people will seek an annual health examination.

The Layman's Difficulty

"In the meantime, the prospective patient, having done his own thinking, and having arrived at the conclusion that it is wise that he shall seek a periodic health audit, presents himself, as he has been advised, to his family physician, after having procured a comprehensive blank from the American Medical Association, the state, county, or some other authoritative medical society.

---

[1]Read at the 13th annual convention and 2nd annual clinical congress of the Catholic Hospital Association at Cincinnati, Ohio, June 18-22, 1928.

Dr. Martin is director-general of the American College of Surgeons and president of the Gorgas Memorial Institute.

"The physician receives the applicant and discovers that the prospective patient is not a patient at all, but apparently a normal person, carrying an elaborate record form against which he expects the physician to check his bodily condition, and record negative or positive findings.

The Practitioner's Difficulty

"In the meantime, the physician has gained a reputation and a livelihood from the practice of medicine in a community, by the exclusive care of sick individuals; but he has been aware of the propaganda advocating preventive medicine, he has recognized the reasonableness of it, and this handwriting on the wall has caused him some anxiety. How shall he meet the demand? He is well equipped as a physician, as he was graduated from a Class "A" medical school; he has kept abreast of the times by attendance on medical society meetings, and the perusal of the best medical literature; he may have taken precautions through extra study at a university clinic or a hospital in the intricacies of a complete and thorough physical examination.

"All of this makes him recognize the fact that he has not the equipment that will make it possible for him, on his own, to examine a patient adequately and give honest answers to the questions contained in the comprehensive blank provided for physical examinations.

The Difficulty Encountered by Organized Medicine

"The obvious difficulties have thus far been insurmountable in the eyes of the authorities in organized medicine who have advocated the advantages of the health examination; and unless the simple method that I am now presenting proves as effective as I believe it will, the problem is still unsolved.

"Briefly, organized medicine, in considering the difficulties of the problem, has had to consider:

"1. How can equal privileges be offered to all legalized practitioners of medicine in this preventive measure for personal health?

"2. How can an individual be prevented from abandoning his personal physician, and yet not suffer disadvantages in the thoroughness of the examination?

"3. How can the individual be accorded the full facilities offered by the few established diagnostic clinics, the medical schools, or the staffs of hospitals, and the practitioner of medicine be assured that he will not forego the privilege of examining his own patients, and not be faced with the possibility of losing his client if treatment is found necessary?

"4. How can the practitioner pursue a course, proper and thorough, in the conduct of periodic health examinations if we do not furnish him with the necessary laboratory facilities, trained technicians, and other essentials?

"5. How can we protect the thousands of independent educated practitioners from the menace of unscrupulous groups, from unethical diagnostic clinics, from unworthy trade-union tactics, and from the subtleties of criminal quacks?

"Think carefully on this subject for just one minute!

"How many practitioners could, unaided, make a complete physical examination of a patient, even though they had at their disposal all of the laboratory and other diagnostic facilities? How many distinguished internists, surgeons, or other specialists would attempt such an examination without the assistance of a number of expert technicians, and occasionally one or more confreres of other specialties?

"Where are the necessary laboratory facilities, the technicians, and groups of specialists found under one roof? In less than a dozen group clinics! In less than a half dozen diagnostic clinics (aside from dispensaries for the treatment of the ambulatory poor in medical schools)!

In the 1,805 Standardized Hospitals!

"In which of these organizations can the independent practitioner best obtain welcome and be furnished with all of the facilities and assistance necessary to make a thorough examination of his patient, and retain his control and make his own charges for services rendered?

"We believe that the standardized hospitals, because of their large number, their independence, their uniform equipment, and their financial backing, will best serve the greatest number of lay people with least inconvenience, and all members of the medical profession; and this coordination would not disturb in the least the established conventions of medicine.

We are advocating periodic health examinations not by specialists alone, but by the family practitioner, the patient's own doctor.

"To save the profession from state or socialistic control, or from other strongly entrenched interests, in the matter of caring for personal health, a simple and practical solution is herewith tentatively suggested that will allow the family practitioner to examine his patients with the same degree of thoroughness and scientific accuracy that can now be accomplished by the comparatively few specialists who command the facilities of large organizations.

The Plan

"There are more than 2,500 hospitals in the United States and Canada that are under survey by the American College of Surgeons. Of these, approximately 1,800 are known as 'standardized' institutions and others are rapidly qualifying.

"A careful yearly survey of hospitals is conducted by the American College of Surgeons, which has furnished the **minimum standard.** The estimate of those qualified is determined by this survey, the results of which form the basis of the annual report on hospitals which is published by the College.

"Each of these standardized hospitals has the facilities, and can furnish the practitioner with the necessary equipment and aids to insure the comprehensive examination of a patient.

"Many hospitals, especially community hospitals, already furnish such facilities to the legalized practitioners within their county. Many of the larger hospitals already furnish such facilities to specialists and other practitioners.

What would be the additional load if all legalized practicing physicians were included?

"After eliminating from the 160,000 physicians of the United States and Canada the practitioners who have ceased to practice medicine, and those who are already adequately furnished with hospital or other diagnostic facilities, there would remain, based on careful compilation, an average of not more than 60 practitioners who would in the course of a year occasionally seek the aid of each hospital in examining apparently healthy individuals.

The Requirements

"The hospital shall furnish an examining room or rooms, to which any legalized practitioner, who is a member in good standing of his respective county medical society and the American Medical Association, may bring a patient for examination.

"The hospital shall furnish to the practitioner every facility in the way of aids, consultants when necessary, laboratory tests, etc., as will insure a comprehensive audit of his patient's condition. The charge for the required laboratory tests shall be nominal, and a maximum of actual cost. There shall be no charge for the use of the examining room. The physician shall render to the patient a bill covering his fee for the examination, and where there is a charge for laboratory services, he shall be responsible to the hospital for its payment.

Safeguards

"1. To insure protection to the practitioner, no hospital shall accord these facilities to any individual who is not accompanied by his or her doctor, or who does not carry a letter from his or her doctor in which certain services are requested.

"2. An individual who applies for an examination and who has no physician should be referred to a duly appointed, disinterested committee consisting of a representative or representatives of the county medical society and the standardized hospitals of the community, and this committee shall advise the patient in the selection of a physician.

"3. Each hospital volunteering to establish such facilities will be accredited as conducting a Health Inventorium.

The Advantages

"It does not require much imagination to convince one of the advantages of this plan—advantage to the hospital because of the opportunity for greater service to the public; advantage to the layman because of an additional assurance of scientific service by his own physician; advantage to the practitioner because of the greater facilities for service to his patient. It will bind together this trinity of interests that will help to stamp out the subtle irregulars as no other method could do.

"The hospital department of the American College of Surgeons has considered the above plan with great care. A tentative survey of a number of community hospitals on the approved list of the College, and presentation of the subject to several groups of practitioners, as individuals and as members of the county and other medical societies, has brought enthusiastic approval. The plan

has been recognized as a sure and effective means of handling the problem of periodic health examinations, and one in which all interested parties will receive just consideration."

PART II
Reaction to the Plan

To the inquiries made, many replies have been received, and these are almost unanimously in favor of the principle advocated. There are several letters, not more than half a dozen, which ask for explanation in regard to the details of the plan. These are of a serious nature. One correspondent asks what would happen to the 2,500 hospitals if every one of our 110,000,000 inhabitants should demand an examination! The inquiries indicate a serious desire for elucidation of the plan, and any implied criticisms are in the nature of constructive suggestions.

Sample Questions And Answers

Q. 1. We note the scheme in regard to calling on consultants connected with the hospital to take part in the examination. Are such consultants to be paid for their part in the examination?

A. 1. When the patient's doctor deems it necessary to call in a consultant (for a pay patient), the consultant should be compensated.

Q. 2. In reference to laboratory charges, was it not the intention to say the "maximum of actual cost?"

A. 2. The fee should be nominal; it should cover actual cost.

Q. 3. Was it the intention to let the family physician make any charge that he desired, or would he be limited to a maximum fee? Our thought, of course, under this point is that we are having a number of people coming to the hospital for just such examinations and we make them a reasonable charge which varies with the amount of special examinations and laboratory work, and also take into consideration whether they enter a private room or ward pay department. The charges in most of these cases would probably exceed that which the family physician would collect for himself, especially if all consultants' services were rendered with charge and if actual costs were charged them for laboratory work. A case, therefore, coming under the health-inventorium plan, comparing notes with a patient entering in the regular way, would find quite a difference in the fee charged for practically the same amount of work. This, as we see it, would be very likely to arouse adverse criticism.

A. 3. It is our desire that the family physician shall maintain his independence in stipulating his fee. If he is possessed of sound judgment, he will take into consideration that the hospital, in the care of patients of means, will require proper compensation. The charge for hospital and laboratory fees must be a matter of adjustment between the practitioner who controls the patient and the hospital, and he should apprise the patient of unexpected charges. (Does the latter portion of the question indicate that some hospitals will render this particular kind of service on an under-rate basis?)

Q. 4. Do we understand that the health-inventorium plan will permit any case, regardless of his financial ability, to come to the hospital, have his consultant work done without charge, and have his laboratory work done at actual cost of same?

A. 4. No. No individual, under this suggested plan, shall be admitted to the hospital for a health examination without his family physician. (See Article 2, Part I, under "Safeguards.") The physician will arrange necessary consulting fees and proper laboratory costs.

Q. 5. The plan apparently contemplates allowing the family physician to be the judge of what tests and examinations shall be made and permitting him to make as many or as few of these as he wishes. Do you think that if this is so, it will insure a patient a complete audit? In other words, the physician may elect to examine the heart and lungs, whereas he may not be competent to make a careful examination or he may order only a portion of laboratory tests, whereas it might be very desirable to include a number of tests which the family physician has not thought of and did not deem necessary.

A. 5. This plan contemplates giving to the practitioner, who has not hospital facilities, opportunity to obtain them. Sympathetic cooperation on the part of hospitals will win the support of the great mass of doctors who, in this new demand, are now unable to care properly for their patients. These doctors will gladly help to make this plan, which furnishes them with new opportunities, a great success.

Q. 6. In the first paragraph under your heading of "The Requirements," a statement is made that certain accommodations shall be furnished to which a family physician may bring a "patient" for examination. Does the use of the word "patient" imply someone who is sick, or is it simply used in the sense of all applicants for an examination? If these various tests and examinations at a minimum price be given to all applicants, the charges will necessarily vary very much from sick people who are referred to us, who have to have these examinations made in order to establish a diagnosis. This again means two sets of fees for practically the same work, and we feel that when such patients compare charges it would be a potent cause of dissatisfaction.

A. 6. What shall we call an apparently healthy individual, when in the examination of apparently healthy young men for service in the great war more than one third of them were found to be **patients?** As to danger of criticism because of a varying charge to healthy individuals and to patients, is not that danger always present where individuals and patients with diverse ailments or no ailments are being examined?

Q. 7. Is it the intention of the College not to carry on its approved list hospitals which do not see their way clear to establish a health-inventorium plan?

A. 7. No. The College is seeking criticism on a subject that it believes to be vital to the hospitals in their relation to family physicians, whose support of the hospitals is of so much importance.

Q. 8. We note that you say "to insure protection to the practitioner no hospital shall perform these services for a patient not accompanied by his or her physician or who does not bring a letter from his or her doctor." This last provision, that a person may command the hospital on presenting a letter, seems to throw open the consulting and laboratory service of the hospital at practically no expense to any practitioner who desires to take advantage of the plan to secure routine examinations for his daily patients.

A. 8. We naturally expect that in this plan a hospital will use the same care to protect itself against imposition as is now used in the admission of sick individuals, whether or not they have a physician.

Q. 9. As a hospital we feel greatly indebted to the American College of Surgeons and highly appreciate the work the College has accomplished in bettering hospital work and standards. We are simply asking these questions because in our own community we see some real objections for us in the plan as outlined.

A. 9. The above queries are in order, and will aid us to perfect a plan that will give each practitioner of curative medicine a means of examining his own patients; insure his patients of a method by which they may safely consult their physician; and afford the community hospital opportunity to aid both, secure pay for actual expenses incurred, and care for an individual at regular rates if he becomes an actual hospital patient.

Five Unfavorable Replies

Number *ONE:* We think such a health measure is not necessary.

Number *TWO:* Presented to the president of the staff, . . . he and we think it would not be advisable nor practical in this town. Any person who desires to have an examination goes to the doctor's office for it.

Number *THREE:* Our staff does not look with favor upon this plan for the following reasons:

1. Practically all of the doctors of ———— already have hospital connections;
2. In view of the difficulty of making such an examination, we do not feel that the average rural practitioner would be familiar with the use of scientific apparatus;
3. Our staff, in connection with a university college of medicine, runs clinics throughout the college year, and is glad to examine any who may be referred to them.

Number *FOUR:* At a meeting of the hospital staff, your letter was taken up. It was decided that at the present time the hospital was not so situated that it could take on this work.

Number *FIVE:* The communication on "Health Inventoriums," inclosed with your letter was considered, and I was instructed to reply that the organization of ———— Hospital was such that it would not be possible for us to conduct such a "Health Inventorium" here.

Summary:

Such health measure is not necessary;

Any person desiring such examination goes to the doctor's office;

Practically all doctors in community on hospital staff;

Difficulties of the examination would make the rural practitioner unable to cope with the scientific apparatus required;

Not situated to take on such work.

Conclusions

Our plan has met with a surprising unanimity on the part of the hospitals that have considered it. There was an indifference or lack of understanding in a relatively small percentage.

That the plan presents difficulties we must admit; but in proportion to the advantages to the hospitals and to the practitioners of curative and preventive medicine in the practice of personal health, these difficulties fade into insignificance.

This plan involves principles which in the near future are to revolutionize the practice of medicine. The problem will be solved in one of two ways:

1. The independent practioners of curative and preventive medicine must find some method of furnishing to their clientele satisfactory health audits, or the family physicians will have the humiliation of seeing their patients desert them for organized pay clinics, the exclusive staffs of pay hospitals, or salaried officers of government, state, county, or city health departments.
2. In defense, the practitioners of medicine will organize themselves in such a manner that they will have in their own offices all necessary equipment, and by group practice methods, succeed in making health audits without the aid of hospitals.

The plan also involves principles that should vitally interest all hospitals, with the possible exception of a few of the larger teaching institutions which have already adopted pay clinic methods, and which in cooperation with their staffs, invite patients—with or without a personal physician—to obtain their health audits in these institutions; and for this they receive the fee.

The majority of hospitals, however, will—as long as curative and preventive medicine is practiced by the independent practitioner—desire the cooperation of such practitioners; and how better can they secure that cooperation than by inviting the practitioner to accept the courtesy of the hospital in examining his apparently well clientele, and to receive the aid of their organization and facilities, on a basis that will enable him to retain control of his own business.

NURSES' SODALITY, ST. JOSEPH'S HOSPITAL, KEOKUK, IOWA

Minimizing the Fire and Explosion Hazard of Anesthetic Agents

C. H. Wardell, Jr., Ph.B.[1]

In the use of ether, ethyl chloride, chloroform-ether mixtures, or ethylene, for anesthesia purposes, it is generally known that great care must be exercised to prevent the unexpected ignition of the gases or vapors. It is common knowledge that these agents form explosive mixtures with oxygen or air, but it is not so frequently recognized that nitrous oxid behaves very much like oxygen in this respect. Nitrous oxid as well as oxygen, is an excellent supporter of combustion as demonstrated by the bursting into flame of a glowing splinter when subjected to an atmosphere of this gas.

All of the previously mentioned gases or vapors are commonly used in anesthesia and may be present singly or in any combination or any proportion. Nitrous oxid and oxygen are not explosive when used together without any other materials, but in almost all of the other possible combinations an explosive mixture may result. In general, in such possible mixtures ignition temperatures are low, explosive limits are wide, and the rate of the flame propagation is high.

The risk may be roughly divided into two classes: that which results from man-made appliances, and that which results from the forces of nature. In the first class fall the open flame, modern high-frequency equipment, and faulty electrical construction. In the latter class comes "static," much maligned and quite generally misunderstood. The two subjects will be dealt with separately.

Open Flame

The most common dangers result from open flames, faulty electrical construction or installation, and similar causes. Open flames and lighted cigarettes should not be permitted in the surgery even when it is not in use as there are numerous cases on record where fires have resulted from smoking in the vicinity of anesthesia apparatus when standing idle. Electric lights and switches should be of the vapor-proof type; if this change is not immediately convenient, care should be taken that light bulbs are screwed tightly into their fixtures, and switches should not be turned during the course of an operation.

Electrical Appliances

If at all possible, electric heaters should not be used with flammable anesthetics. Some of the existing types are so constructed that the elements are not vaporproof, the gases having free access to the glowing wires. (As this article is being written, advice is received that a manufacturer of anesthesia apparatus has developed an hermetically sealed electric heater for gas machines which has been accepted and passed by the fire underwriters.) If it is necessary to use a heater, it should be carefully inspected to make sure that it is of the proper type; loose connections should be carefully tightened. It should be connected (care being taken that the plug makes a tight, solid connection) before the machine is put into use, and should not be disconnected until the operation is over and the room ventilated. Worn electric cords and cables, as well as loose connections present a serious danger and should be subject to periodic inspection and replacement. Electrical devices should be carefully selected. Motors which are fully inclosed and vaporproof as well as those of the self-starting induction type (except the single phase variety which incorporates an automatic centrifugal switch) may be permitted.

X-rays and fluoroscopes may be used in the presence of flammable anesthetics provided they are of the self-contained, oil-submerged type, and further provided that the switches are oil-submerged or the remote-control type. The "radio" or high-frequency knife, the diathermy, and the hot or electric cautery should **not** be used in the presence of a flammable anesthetic. In such apparatus, portions of the circuit through the patient necessarily have high alternating potentials with respect to ground, and sparks are very liable to occur from the patient to any other conducting body, such as the anesthesia machine or the operator, whether these are grounded or not.

[1]Chief Chemist, The Ohio Chemical and Manufacturing Company, Cleveland, Ohio.

Recently, a serious accident occurred in a large institution due to the use of a high-frequency machine in the vicinity of an atmosphere of ether vapor. The cause was primarily the discharge of an electric current from a point of high potential to a point of lower potential, producing a spark which ignited the ether vapor adjacent to the anesthetizing machine. It is therefore of the utmost importance that the anesthetizing machine and all flammable gases and liquids be removed from the room while cauteries or other equipment employing high-frequency current are being used. Consequently, when anesthetics are being administered in the presence of high-frequency equipment, nitrous oxid and oxygen, exclusive of any flammable synergist, is unquestionably the safest anesthetic.

Static Electricity

Static electricity is a serious danger which is always present when flammable, volatile materials are being used. There are innumerable cases recorded where serious fires with consequent loss of life have resulted from the ignition of flammable gases, dust particles, volatile solvents, or dry-cleaning materials. Our hospitals have not escaped the toll, for there have been many disastrous fires resulting from the ignition of anesthetic agents by static sparks.

The difference between a static spark and ordinary electric power or lighting current is largely a variation of duration, voltage, and amperage. The static spark lasts only a fracton of a second and has a very high voltage. If we walk across the carpet of our home in dry winter weather we obtain a spark of considerable size when we bring the finger close to a grounded object such as a radiator, water pipe, or lighting fixture. In such cases the electric charge has become so large that it no longer remains "static" but jumps through the air in the form of a spark to some other body or to the ground. Under proper conditions, meaning a dry atmosphere and the walking across an insulated floor covering such as linoleum, carpet, or rubber, the spark would be sufficient to cause a fire in any establishment having exposure to flammable vapors. Persons with dry skins are more prone to such accumulations of static because they do not have a sufficient film of moisture to conduct the charge to ground.

Static charges are built up in many different ways; we are all familiar with them as manifested by the sparks and crackling sounds produced when we rub the back of our pet cat. In this connecton, there is more or less humor in the case of the famous New Bedford tomcats. The city fathers, for the dispatch of stray cats, provided a tank filled with illuminating gas for suffocation. In several instances when particularly lively "toms" were cast into the tank, explosions occurred, being caused by discharges of static electricity.

It is not so generally known that such charges may be produced by the contact or separation of any two unlike materials whether solid, liquid, or gaseous, by friction, or by a gas in motion whether through a pipe, tubing, or in the air. It is a matter of controversy just how electro-static charges are produced by the flow of gases past solid surfaces, however, experimental evidence seems to confirm the belief that they are caused by the presence of minute particles of dust or droplets of liquids carried along by the stream of gas. Everyone will quickly realize that the proper conditions for the production of static may exist when gases or vapors pass through anesthesia machines or parts of such machines. The electricity is liable to be produced and stored ready to exhaust itself as an electric spark at the first opportunity. It is also caused by the expansion or contraction of the rubber breathing bags which form a part of some anesthesia machines. Some of these bags are incased in fiber, silk, or cotton mesh and the movement of the rubber bags against these meshes causes static charges to be formed. Such charges may exist on the inside of the bag as well as on the outside and it has been demonstrated that they remain in the rubber for a great length of time; in one instance for more than three hours. When this condition

exists someone may touch the machine, bringing about the contact which produces the electric spark, or changing the position of the machine may cause the bags or hose to sway so as to produce contact with a metal part which may also produce a spark sufficient to ignite flammable gases or vapors should they be present.

The action of wind and upward air currents in breaking up large raindrops, as well as the friction of the wind, may gradually build up a charge of such enormous size and potential as to cause the tremendous spark which we know as lightning. The friction of wind on sand and dust particles has been known to cause high electric voltages. One experimenter states that static charges may be found on the rust particles escaping from compressed-air tanks. Experiment has proved that hydrogen escaping from a tank which is rusted on the inside may be thus ignited. Puffs of steam and smoke from locomotives have caused high charges in overhead electric wires.

Increasing Humidity

There is a remedy for static electricity. Industry has already solved its problem. Increased humidity supplemented in certain cases by proper grounding has reduced the static hazard to a negligible quantity.

It is common knowledge that it is most difficult to get a static spark in wet weather and easiest in winter when the air is dry. In damp weather all objects carry a film of moisture containing some impurities such as dissolved carbon dioxide. This film of moisture is a fairly good electrostatic conductor and serves to connect every part of every object to ground, thus preventing the accumulation of static charges. The degree of conductivity of this film depends upon the relative humidity of the air.

Relative humidity refers to the relation that exists between the actual amount of moisture present in the atmosphere and the amount that could exist under the same conditions of temperature and pressure without condensation.

The relative humidity of operating rooms has been investigated on numerous occasions and has been found to be very low. This fact is due in a large measure, to the unusually high temperatures which are prevalent in the surgery. In winter time, when outside air is taken into a building and heated, a greatly lowered relative humidity results. For example, if the outside air were ten degrees Fahrenheit and the relative humidity were 90 per cent at this temperature, the resulting humidity would be only 20 per cent if the room were heated to 76 degrees Fahrenheit. Of twelve operating rooms investigated by Lake, the humidity of five was between 25 per cent and 30 per cent, of six was between 30 per cent and 34 per cent, and only one was 40 per cent. In order to raise the relative humidity of a room, it is necessary to add moisture in the form of steam, vapor, or spray and to prevent its subsequent condensation on cold surfaces such as windows and outside doors.

The percentage of relative humidity required to dissipate static charges is a question of debate; however, we may well be guided by the previous experience of other investigators in similar fields. One authority states that a relative humidity of 50 per cent at 70 degrees Fahrenheit entirely disposed of static troubles in a rubber factory. Another company handling flammable materials also found that 50 per cent relative humidity prevented explosions from static. A well-known dry-cleaner, having experienced six explosions, and having exhausted all other means, raised the relative humidity to 40 per cent and had no further trouble. It has been shown that a relative humidity of 45 per cent gives a safe atmosphere, preventing static difficulties and consequent fires in the churn and spreader rooms of the rubber industry. It has been stated that every year almost 1,000 women are burned to death as a result of fires from dry-cleaning at home. Many of these fires and their consequent deaths were caused by static sparks generated by friction of the clothing during the process of scrubbing, the sparks igniting the gasoline or naphtha which was being used. If the rooms in which these accidents occured had been properly humidified, the static charges could not have formed and the explosions would not have taken place. The housewife was not cognizant of the facts and even though she possessed the proper instrument for determining humidity, she would not have known how to proceed. Our hospitals, though, are more fortunate than the housewife, for they are operated under the supervision of a highly trained staff, and have readily available for use, humidity recording devices, as well as efficient and entirely automatic humidifiers.

A national association for fire protection states that when the humidity of the air is more than 55 per cent the moisture acts as a conductor, carrying off charges as they are formed, thus preventing static sparks. In commercial dry-cleaning plants, instruments known as hygrometers are used to measure the amount of moisture in the air, moisture being added artificially when the humidity falls below 60 per cent. These last statements agree well with our research when we found that, in operating-room conditions, 54 per cent relative humidity would relieve the formation of undesirable electrical charges.

Having raised the relative humidity of the surgery to 55 per cent at 70 degrees Fahrenheit, could we be sure that our protection against static electricity was complete? We could not, because inside of the gas cylinders and throughout the anesthesia apparatus, there is a dry gas, a gas wherein the relative humidity is reduced to the lowest limit. This dry gas, in passing through orifices and rubber tubing, is very prone to pick up static charges. Should these charges be given up to metallic devices, they would be distributed throughout the metal, and thence to ground, due to the conducting film of moisture on the outside surfaces resulting from the high humidity of the surgery. On the contrary, if these charges should be given up to parts which are well insulated, for instance dry rubber hose or rubber bags, they would not be dissipated but would accumulate. Should these charges accumulate to such an extent that they might dissipate themselves spontaneously in the form of a static spark, and should there be a flammable mixture within the anesthesia apparatus, an internal explosion within the apparatus itself would most certainly result.

What, then, is the answer? All equipment, such as cylinders and anesthesia apparatus should be electrically interconnected, preferably using metallic insert hose. The breathing bags and hose should be rinsed with water before use. It is wise to insert small wet sponges in the breathing bags, as they will give up water and insure proper humidification should the operation prove a lengthy one. If the room is properly humidified, the equipment may well be grounded. In dry atmospheres without humidification it is not impossible to have conditions where grounding would be undesirable; **humidification therefore is of the utmost importance.**

After use, it is excellent practice to thoroughly flush all flammable gases from the equipment with carbon dioxide. Hose and bags should be removed; bags should be deflated and flushed with water.

Flammable mixtures of anesthetic agents may be found in operating rooms due to leakage from valves, defective tubing, leaky bags, or poor joints. The gases which are exhaled by the patient are almost always explosive, provided a flammable anesthetic has been used. Recently our laboratory investigated about 50 cases using combinations of ether, ethylene, nitrous oxide, and oxygen and in almost every test the exhaled gases contained ether and oxygen, or ethylene and oxygen, well within the percentages of the flammability limits. These conditions existed not only during the period of the operation, but persisted for several minutes after the anesthetic had been discontinued.

Effects of Humidity

It has been demonstrated that the presence of vapors in air results in a mixture of less dielectric strength than air itself. For example, it requires 16 per cent less voltage to puncture a mixture of 10 per cent naptha and 90 per cent air than it does to puncture air alone. Naturally, when a spark does occur, it will choose the path of least resistance and will take a course through the flammable mixture rather than through air.

The effect of increased humidity upon health will perhaps be questioned. Fifty-five per cent relative humidity is not high, and it is the general consensus of opinion that such a percentage would prove beneficial rather than harmful. An editorial in the Journal of the American Medical Association commenting on Lake's findings of humidities varying from 25 per cent to 40 per cent says, "whether or not it is advantageous for patients to be subjected to dry heat may be debatable. The only suitable way to alter the situation is to provide artificial humidification." Dr. Winston in the same journal writes: "It seems to me a serious question whether such very

dry air may not promote harmful evaporation from the body cavity." One of the newest hospitals in Baltimore has been equipped with humidification systems whereby the operating rooms are maintained at 60 per cent relative humidity. Ellsworth Huntington in "World-Power and Evolution" and Dr. Edwin Grant Dexter in "Weather Influences" discuss in detail the effect of humidity upon health. It is safe to say that the reader of these two very interesting books cannot but be convinced that low humidity has a direct bearing upon crime and general deportment, as well as upon health itself.

To many, humidification may seem a serious problem but there are organizations of worthy reputation who specialize in producing equipment which is guaranteed to condition the air properly. Many large public buildings, factories, theaters, stores, and office buildings use similar equipment. In addition to humidification some of these systems automatically maintain an even temperature and provide a complete air change in the room every four or five minutes.

In closing, the dangers of flammable anesthetics may be easily and thoroughly controlled. Man-made risks may be eliminated by thoughtful care and good judgment coupled with properly installed equipment subject to periodic inspection. The static hazard may likewise be reduced to a minimum by the use of rubber parts which have been made electrostatically conductive (by moisture and metallic devices) and by the use of a suitably designed and correctly installed humidification system.

Bibliography

In their study of this subject, **The Underwriters' Laboratories** mention the following points:

Open flames, lighted cigarettes, and any source of ignition should not be permitted in the operating room.

Electric lights and switches should be of the vapor-proof type.

Constant care should be taken to prevent the use of worn electric-light cords or cables, and to eliminate loose connections.

Only inclosed motors of approved type should be permitted in the room.

Humidity will, undoubtedly, reduce the fire hazard, but effectiveness will depend upon maintenance of humidity.

Rubber bags and other objects likely to accumulate electricity should be protected so far as possible by metallic coverings or inserts.

The author gratefully acknowledges the valuable suggestions and assistance given by Dr. M. G. Lloyd, Chief, Section of Safety Engineering, Bureau of Standards, Department of Commerce, Washington, D. C.; F. B. Silsbee, Physicist, Bureau of Standards, Department of Commerce, Washington, D. C.; F. W. Peek, Jr., General Electric Company, Pittsfield, Mass.; W. S. Paine, Aetna Life Insurance Company, Hartford, Conn.; Dr. N. A. Lange, Case School of Applied Science, Cleveland, Ohio; Dr. H. S. Booth, Morley Chemical Laboratory, Adelbert College, Western Reserve University, Cleveland, Ohio; Pierre E. Haynes, Consulting Chemical Engineer, East Aurora, New York; B. L. Benbow, Manager of the Cleveland Wire Division, General Electric Company, Cleveland, Ohio; E. R. Goldfield, Engineer, Engeln Electric Company, Cleveland, Ohio.

The following literature was referred to and abstracted from during the preparation of this article:

Static Electricity, National Safety News, December, 1922.

Air Condition as a Factor in Health, Bulletin No. 1, Taylor Instrument Company.

Dictionary of Applied Chemistry, Thorpe.

Ganot's Physics, Atkinson.

Smithsonian Physical Tables, 7th Edition—Fowle.

Explosibility of Anesthetic Agents, 3rd Edition, The Ohio Chemical & Mfg. Company.

Humidity Prevents Static in Dry Cleaning, National Safety News, February 1923.

Its Dangerous, National Fire Protection Association.

World Power and Evolution, Huntington, Ellsworth.

Weather Influences, Dexter, E. G.

Temperature and Humidity in Certain New York Hospitals, Lake, Alice L., Journal Home Economics, 5:301. 1913.

Heat, Humidity and Working Power, J.A.M.A., January 30, 1913.

Temperature and Humidity in Hospitals, J.A.M.A., 61:1541.

The Importance of Studying the Actual Condition of Hospital Air, Winslow, C.E.A., J.A.M.A., November 7, 1914.

Paper on Static Electricity by Carl Hanor, U. S. Industrial Chemical Company.

Live Articles on Special Hazards, No. 15, Underwriter Printing & Publishing Company.

Hospital Research, Analytical Reports, Research Laboratory, The Ohio Chemical & Mfg. Company.

Factors in the Administration of Ethylene, W. B. Lewis, M.D. and E. F. Boehm, R.N., American Journal of Surgery, June 1928.

1928 GRADUATES, ST. ANTHONY HOSPITAL, SCHOOL OF NURSING, OKLAHOMA CITY, OKLA.

The Dietitian's Department

Conducted by Sister Mary Victor, O.S.F., B.S., Dietitian, St. Mary's Hospital, Rochester, Minn.

THE DIETITIAN AND PROFESSIONAL ORGANIZATION[1]

Mrs. Mary Pascoe Huddleson, Editor, Journal of the American Dietetic Association

That species of the genus homo known as dietitian seems to inhabit chiefly North America; she is almost, if not quite, unknown abroad. One may go to a lecture at the Pasteur Institute in Paris—the center of nutrition interest and research in France—the dietitian is not in evidence. There will be a few women in the audience, certainly, but they will be recognized as medical students from the École de Médecine. Perhaps they do not need dietitians, yet Marcel Labbé, in his book "Le Traitement du diabétique," and also recently in the Presse Médicale, writes most enthusiastically of American women dietitians. Having visited America, he has nothing but praise for the "directrice de régimes" and her "infirmières de régime." He laments the lack of such assistance in France.

The French diet seems to meet the needs of the French and while seemingly high in protein according to our earlier standards, may not be so in the light of more recent observations. The lavish use of cheese probably supplies sufficient calcium, since milk is little used. Well-prepared vegetables and salads are always in evidence. The typical Frenchman's keen aesthetic sensibility regarding food seems to have guided him toward the selection of a diet more or less suited to his normal requirements.

The same dearth of dietitians is evident in England. I attended lectures given by Sir Cowland Hopkins at the Royal Society of Physicians in London; no other dietitians were in the audience. Sensational dietary fads are popular in England. Lack of interest in scientific research work in nutrition seems to be demonstrated by the meager attendance at lectures given by leaders in the field. Yet it would be a mistake to assume that the British race is dying for lack of dietitians. That they are waking up to their need, is evidenced by the fact that the first chair of dietetics was founded at the University of London during the past year.

Dr. Walter Eddy, professor of physiological chemistry at Teachers' College, Columbia University, who returned recently from abroad, states that there is much more active research in nutrition, both by men and women here than in any other country. Perhaps we need it more. The American diet has become a mélange of English, French, German, Italian, Hungarian, Chinese, and numerous other diets. No one but the trained dietitian can piece together the good in each. With her skilled teaching we may in time assemble a really ideal and typical American diet.

The dietitian's past goes back into that benighted period when protein was proteids, when people existed without the inspirational benefit derived from the known presence of vitamins A, B, C, D, and E in their food, and antedates the era of the hundred-calorie portion which was later to electrify humanity. During those early days she struggled on unassisted either by nems, shares, or budgets. She arranged menus with due regard for "proteids," carbohydrates, and fats, seasoning these with the appropriate mineral salts, but in the light of our present knowledge our earlier ignorance seems abysmal. Looking back it all seems a long time ago, yet it is only a short fifteen years since the present definitely established profession of dietetics began to crystallize. This period has also been marked by rapid advances in our knowledge of the science of nutrition.

Beginning of Dietetic Association

Ten years ago last fall the American Dietetic Association was founded by a little group of pioneer women whose vision places us forever in their debt—Lulu Graves, Lenna Cooper, Violet Ryley, Maude Perry, E. M. Geraghty, Emma Smedley, Margaret Sawyer, Katherine Fisher, and others. Coincidentally with the birth of our national association, the dietitian first appeared in the service of her country during the war. Thus, in line with the past experiences of our sister organization, nursing, we may definitely say that our professional début came concurrently with wartime service both in this country and in France. The war and its demands undoubtedly precipitated the formation of our association, since the purpose of this first meeting was stated as follows: "There should be an opportunity for dietitians to come together in conference and meet with workers in scientific research. Now that our national crisis requires conservation on every hand, it seems highly important that the feeding of as many people as possible be placed in the hands of women who are trained."

Following this first meeting, invitations were extended by three national organizations for the American Dietetic Association to meet with them at their annual conventions. Accordingly, the invitation of the American Hospital Association was accepted, and the first annual meeting held in Atlantic City, September, 1918. Thus, affiliated organizations were first introduced to the newly formed national association of dietitians. As a result, we read in the report published in 1919 that "The demand for dietitians is greater than the supply; . . . hotels are beginning to experiment with such service; social-welfare dietitians are recognized as a necessary part of the well-organized dispensary. . . . Hospitals of all kinds are clamoring for dietitians. It is obviously the part of the American Dietetic Association to make the standard high for both the dietitian and the hospital."

The Army Dietitian

Perhaps the need for professional organization has been more distinctly impressed upon me than upon some of you here present. In 1917, I was assigned to a base hospital for overseas duty and went through the difficult experience of acting as a brand-new unit in an old and established institution—war. The nurse had shown her value in other wars, she represented a well-coordinated group. The dietitian had to make her place, single handed, without the benefit of a strong professional organization. Without army status or precedent, the army dietitian had to cut through red tape and overcome innumerable difficulties with food supplies, smoky stoves, and suspicious and skeptical mess sergeants. Restless under their inability to function in their real capacity as administrators, many dietitians resented the imputation that they were cooks. A kindly government soothed these with printed orders from G. H. Q. stating in bold black type that "The Dietitian is not a Cook." Most of us cheerfully tacked this up on the walls of the diet kitchens and went right on cooking. It affected our status not in the least. Only after worlds of diplomacy and earnest effort did any of us graduate to a wider field of usefulness as "lady mess sergeants."

The nurse through her strong professional organization and demonstrated worth in the past, has acquired a definite military status. It remains for us, through our organization, to safeguard future wartime dietitians so that their military status and resultant necessary authority may be assured and their services unhandicapped. As members of an increasingly large body of professional women, we have reached the point where our voice can be heard loudly enough to have weight with those august persons who dispense military status. Army nurses have rightly earned military rank, it remains for army dietitians to follow through.

Advantages of Association

What does professional organization mean in civilian life? It means that when you, a member in good standing of the American Dietetic Association, enter a hospital for duty you will be respected not only for your individual worth but also because you represent a group whose voice has numerical value and, therefore, weight, whose membership is jealously guarded and not easily gained.

Membership in the American Dietetic Association gives you, through the four specialized sections, contact

[1]Read at the meeting of the Cincinnati Dietetic Association at the 13th annual convention and 2nd annual clinical congress of the Catholic Hospital Association at Cincinnati, Ohio, June 20, 1928.

with leaders in the various fields of activity. If you have anything to contribute to the common good you are encouraged to do your bit. Membership in your national organization indicates to our affiliated professional groups—the American Medical Association, the American Nursing Association, the American Hospital Association, the Catholic Hospital Association of the United States and Canada, and others, that you are identified with a specialized organization requiring high standards of its members; it indicates that you think well enough of your profession to wish to maintain a group loyalty and to do all in your power to advance the interests of your chosen vocation. Membership means that you are no longer a "maverick," unbranded, unclassified, since the term "dietitian," comparatively unknown ten years ago, or translated as "glorified cook," has been clearly defined in our requirements for admission. State registration, the ultimate goal of our organization, will doubtless define the term legally, as it now does for the members of the medical and nursing professions.

Loyalty demands your affiliation with the American Dietetic Association. Personal advantage, especially for the younger dietitian who will be given that courage which comes with strong professional backing, urges the wisdom of membership. Hospital superintendents are increasingly interested in our group; membership suggests your greater worth to them. The Association gives you the interest and help of leaders in your profession, the advantages of the placement bureau and the Journal of the American Dietetic Association.

Whether you enter as full member, associate, or junior, you cannot afford to delay identifying yourself professionally. I look forward to the time when membership in the four sections of our association—the sections on administration, diet therapy, education, and social service will be an honor eagerly sought and awarded to those who have shown their worth in these respective fields. Only through professional honesty, loyalty, and perseverance can we earn our rightful place with those older groups who have battled long and earnestly for their place in the sun.

Fifth Convention Of The Maritime Conference Of The C. H. A.

The fifth Maritime Conference of the Catholic Hospital Association held at Charlottetown, P. E. I., on June 20, 21, and 22 was decidely a success. Rev. Mother Audet, R.N., Hotel Dieu of St. Joseph, Campbellton, N. B., the capable and energetic president of the Conference, directed the activities of the convention. The keynote of the proceedings was Nursing Education in the Maritimes, though the human and philanthropical phases received due attention also. Delegates were present from the Hotel Dieu Hospitals of Chatham, N. B., Campbellton, N. B., Moncton, N. B., St. Basil's N. B., and Tracadie, N. B.; St. John's Infirmary, St. John's, N. B., City Hospital, Charlottetown, P. E. I., St. Martha's Hospital, Antigonish, N. S., St. Joseph's Hospital, Glace Bay, N. S., Ross Memorial Hospital, Sydney, N. S., and St. Mary's Hospital. Inverness, N. S.

The Conference opened with Mass celebrated by Rt. Rev. L. J. O'Leary, bishop of Charlottetown, who also preached a masterly and eloquent sermon on the mission of the Holy Ghost in the Church. Very Rev. Msgr. McDonald of Charlottetown delivered a very fine and inspiring address of welcome, to which the president warmly responded. The first paper on the program was "Hospital Mentality" by Rev. John R. McDonald, P.P., Georgeville, N. S., who did full justice to the subject in his usual practical and convincing style, which elicited much favorable comment. "Hospital Hospitality" was the theme of the next paper by Sister M. Beatrice of Bethany, Antigonish, N. S. Sister Kerr, R.N., R.Ph., of Hotel Dieu Hospital, Campbellton, N. B., presented an excellent paper treating of "Hospital Conferences" which was followed by a demonstration in which the Hotel Dieu Sisters from the various hospitals of New Brunswick took part. At its conclusion Mother M. Ignatius of Bethany opened a lively discussion on the same subject. Sister M. Elizabeth, dietetian of St. Joseph's Hospital, Glace Bay, presented a paper on "Liquid Diet," which was followed by a demonstration and a very interesting discussion by Sister Katherine, R.N., of St. John's Infirmary, N. B. This closed the afternoon session of the first day after which the delegates were treated with a motor trip to "Allamor," the beautiful summer residence of Bishop O'Leary. The evening session consisted of an informal meeting of the Sisters with Mother Audet as chairman when the following topics were freely discussed: (1) "Pharmacy Work in Our Hospitals," by Sister Kerr; (2) "Nurses' Sodalities," by Sister M. Rita, R.N., directress of nurses, St. Joseph's Hospital, Glace Bay, N. S.; (3) "Miscellaneous Problems," by Mother Audet, president, and Mother Francis Loyola of Mount St. Mary, Charlottetown.

A pleasing feature of the conference was an informal visit from His Lordship, Rt. Rev. James Morrison of Antigonish, who invariably takes a keen interest in all progressive movements.

The first session of the second day's deliberations opened with a scholarly and forceful address on Nursing

DELEGATES OF THE MARITIME CONFERENCE OF THE C. H. A. AT CHARLOTTETOWN, PRINCE EDWARD ISLAND, JULY 20-22, 1928

"ALLAMOR," THE SUMMER RESIDENCE OF RT. REV. L. J. O'LEARY, D.D., AT CHARLOTTETOWN, PRINCE EDWARD ISLAND

Education by Rev. P. J. Mahan, S.J., regent of the college of medicine of Loyola University, Chicago, Ill. He dwelt particularly on the requirements for the grading of schools of nursing and how the small hospitals may meet such requirements. A thought-provoking discussion followed by Sister M. Camillus, R.N., directress of nurses, St. John's Infirmary, St. John, N. B. The next number on the program was a most enlivening round-table discussion opened by Rev. P. J. Mahan, S.J. "The Faculty of the School of Nursing in Small Hospitals" was the interesting subject of his comments, which threw a great deal of light on this very practical phase of hospital problems. The afternoon was also devoted to round-table discussions in which the weak points in our nursing education were discussed, with Father Mahan acting as chairman. The second evening session was also an informal meeting of the Sisters with Sister M. Camillus as chairman, who also gave an interesting report of nursing education in New Brunswick. A demonstration on "Lesson Planning and Teaching in Schools of Nursing" was given by Sister M. Jovita, directress of nurses, St. Martha's Hospital, Antigonish, which was followed by a round-table discussion, presided over by Sister Carroll, instructress of nurses, Hotel Dieu Hospital, Montreal. The morning session of the last day was splendidly covered by Dr. Helen McMurchy of Ottawa, who gave a very fine address on "Child Welfare in the Department of Health of Canada," and Dr. G. Harvey Agnew, secretary of the hospital service bureau, Canadian Medical Association, Toronto, who gave a wonderful talk on "A New Development in Canadian Hospital Life." Both addresses were particularly instructive and of great practical value to hospital workers in general. Business meetings, election of new officers and committees, a visit to the scientific and commercial exhibits of Prince of Wales College, and a pleasant drive to Falconwood closed a very splendid program.

Officers of the Maritime Conference of the C. H. A.

The new officers elected for the year 1928-29 are:

President—Sister M. Camillus, R.N., Directress of Nursing School, St. John Infirmary, St. John, N. B.

1st Vice-President—Sister M. of the Sacred Heart, R.N., Superintendent of St. Mary's Hospital, Inverness, C. B.

2nd Vice-President—Sister Kerr, R.N., Directress of Nursing School, Hotel Dieu of St. Joseph, Campbellton, N. B.

3rd Vice-President—Sister M. David, R.N., Directress of Nursing School, Halifax Infirmary, Halifax, N. S.

Secretary-Treasurer—Sister Monn, R.N., St. John Infirmary, St. John, N. B.

Executive: Sister Audet, R.N., Hotel Dieu of St. Joseph, Campbellton, N. B.

Reverend Mother Loyola, Superior, Mount St. Mary's, Charlottetown, P. E. I.

Sister Ann Seton, R. N., Superintendent, Halifax Infirmary, Cobourg Branch, Halifax, N. S.

Sister M. Jovita, Directress of Nursing School, St. Martha's Hospital, Antigonish, N. S.

Sister Louise Gertrude, R. N., Directress of Nursing School, Hotel Dieu de l'Assumption, Moncton, N. B.

Convenors of the Committee

Nurse Education—Sister Audet, R.N.

Pharmacy—Sister Kerr, R.N.

Dietary—Sister M. Elizabeth, St. Joseph's Hospital, Glace Bay, C. B.

Records—Sister Shannon, R.N., Hotel Dieu of St. Joseph, Campbellton, N. B.

Laboratory—Sister Hickey, R.N., Hotel Dieu of St. Joseph, Chatham, N. B.

X-ray—Sister Immaculata, St. Martha's Hospital, Antigonish, N. S.

Publicity—Sister John Baptist, Bethany, Antigonish, N. S.

Sodalities—Sister M. Rita, R.N., Directress of Nursing School, St. Joseph's Hospital, Glace Bay, C. B.

Maritime Guild of Catholic Nurses—Reverend J. R. McDonald, P.P., Georgeville, N. S.

Constitutions and By-Laws—Sister M. Camillus, R.N.

PRESIDENT'S ADDRESS, MARITIME CONFERENCE

Sister M. Audet, R.N., Charlottetown, P. E. I.

I am highly honored to be afforded the opportunity of addressing you this morning at this biennial meeting of our association.

At the call of this meeting we have dropped our various activities at home; we have come from near and far, and we are now assembled here to offer our individual ideas and to profit by the presentation of each other's views. It is good too for us to come face to face in personal contact with others who are actuated by the same supernatural motives as ourselves, for are we not all closely united in the bond of a spiritual fellowship that sees the Christ in the least of His brethren, in accordance with the words: "I was sick and you visited me."

We all realize that this getting together to discuss the difficulties which are common to us all and to receive and give information and suggestions, will throw a light by which we may be able to solve the various problems of our respective hospitals. In order to attain this end, however, each delegate must be ready and willing to take an active part in the deliberations of this meeting, and we should all realize that there is a certain responsibility involved in attending such a convention as this. Certainly the importance and value of this gathering will depend almost entirely on the amount of intelligent interest and

the degree of earnest cooperation, which each individual delegate gives to its sessions and discussions. I trust the genuine goodwill will reign throughout our deliberations and that hearty enthusiasm will permeate the whole of the sessions, and I am sure that if each delegate does her part, we will all be greatly benefited by having come together.

There can be no question but that the organization of the Maritime Conference was a step in the right direction. The fundamental idea behind the movement was that such a conference could and would render great and valuable services to our individual institutions. Prior to the year 1922, the Sisterhoods of the Maritime Provinces engaged in hospital work were not so much as acquainted professionally. Each hospital was struggling with its own difficulties without being cognizant of the efforts of the others, all striving toward the same goal. We had no means of contact to exchange our ideas and to strengthen our morale, in short, our efforts for betterment were not united. Under these circumstances, our conference was founded, and its aim was to advance the general interests of our hospital workers, to encourage the spirit of cooperation and mutual helpfulness among hospital workers, and to promote by meetings, by discussion, and by other possible means, greater efficiency in our hospitals. So far, our conference has proved beneficial in the following ways:

1. Yearly meetings have been held at which very practical papers have been read and discussed.
2. Visits to the different hospitals have been exchanged.
3. Sisters have been sent to our various hospitals for training or special studies.
4. Mutual help and information have been given by correspondence among the superintendents, technicians, etc.

It is evident that the organization of our conference was a worthy venture, but way must now be made for further growth. If these annual gatherings are to justify themselves, they must give even more tangible results than they have in the past. In my opinion we should not confine our activities to the preparation merely of yearly or biennial meetings. Continuity of performance is an essential element of success, and if we wish our association to serve as a means of intercommunication and cooperation between the Catholic hospitals of the Maritime provinces, we must adopt teamwork as our ideal, and we must secure it so far as is humanly possible. Teamwork means an organized working together that is active, steady, and intelligent. It must have behind it the real spirit of progress and harmony which will result from every member doing his part.

As a means to that end, I suggest that it would be expedient to form special committees for the purpose of studying questions bearing on the problems of the day, for instance, committees on:

1. Nursing Education.
2. Standardization of the departments of hospitals: (*a*) Dietary, (*b*) Laboratory, (*c*) X-ray, (*d*) Obstetrical, (*e*) Anesthesia, (*f*) Records, (*g*) Pharmacy.
3. Sodalities.
4. Publicity.
5. Constitution and by-laws.

After our annual convention is over, each committee should set out to do its definite work, to formulate a clear policy, and to stipulate a definite course of action; at the subsequent convention each of these committees should present reports. These reports should be studied and discussed and adopted either in their original or in some modified form, and given to the committee for further study, and in this way each convention would be a basis for further advancement and betterment of conditions and ought to lead to some acceptable and practical plans to solve some of the problems of our hospitals and of our nursing schools.

Finally as an association let "growth" be our watchword, not so much growth in more size as the larger growth in strength of purpose, in concerted action, and in the forwarding of our ideals. As I have already stated, this growth can be effected chiefly through well-organized teamwork. As hospitals, then, let us grow in the science of organization and management and in the educational advancement of our schools of nursing, and as individuals in the great team—God's team—let us strive to be leaders in all that is best for the care of the sick.

How It Is Done

New Policy Adopted by Buffalo City Hospital

The Buffalo City Hospital has recently adopted a policy which will be of much advantage to the medical profession while giving the community the benefit of the best practice in the modern discoveries in medical science.

Whenever a new patient enters the wards of the Buffalo City Hospital, or applies for treatment in the outpatient department, the last doctor employed by the applicant will be notified in writing. Such letters of notification will state that private physicians are privileged to treat full-pay patients in the wards, and that they may also visit part pay and free patients for purely scientific or personal reasons, provided no charge is made for this service.

The financial rating given by the Buffalo City Hospital to the prospective patient also will be set forth and the private physician asked whether or not in his opinion, the classification indicated is proper. These letters will also state that, immediately after the discharge of the patient, a summary of the medical findings of the attending and house staffs of the hospital will be forwarded to the physician designated. Also, each notice will include a cordial invitation to the physician to attend any of the diagnostic, treatment, or operative clinics maintained by the Buffalo City Hospital, either with the patients referred or as an observer.

This communication to physicians will close with the statement that it is the aim of the Board of Managers, Buffalo City Hospital, and the Council of the University of Buffalo to make the former institution helpful to the medical and dental professions, and that the entire clinical and laboratory service of the hospital is at the disposal of physicians and dentists for this purpose.—Health News

A Good Cleaner and Polisher

Oak floors and other woodwork can be cleaned and polished very easily and economically by the use of equal parts of vinegar, sweet oil, and turpentine. These ingredients can be purchased at any paint store. The object of this preparation is that the vinegar eats the dirt, the sweet oil adds luster, and the turpentine acts as a dryer.

Weekly Clinics Valuable

St. Joseph's Hospital, South Bend, Ind., operated by the Sisters of the Holy Cross, has a clinical meeting every Tuesday morning. Cases of particular interest and puzzling diagnosis are discussed, the patients being present with charts, X-rays, etc.

At the monthly staff meetings, of course, the deaths that occurred during the past month are talked over and the result of postmortem examinations given.

Food Wagons

At St. Joseph's Hospital, South Bend, Ind., the food is kept hot while being transferred from the main kitchen to the floor kitchens by steam-table facilities on the food wagons.

Special Reports by Doctors

At the staff meetings, at St. Rose Hospital, Great Bend, Kans., some one of the doctors gives a special report on some interesting subject after the regular reports and discussion of records. This hospital has recently added a new wing to the building, bringing the bed capacity up to 105.

Financing a Social Worker

The outpatient department of St. Joseph's Mercy Hospital, Detroit, Mich., is now financed by the Community Union. This enables the outpatient department to employ a social worker to extend further the hospital's work among the poor. The social worker is a registered nurse.

Infants to Receive Certificates. All babies born at the Good Samaritan Hospital at Cincinnati, Ohio, will receive a special certificate and diploma indicating the date of the birth at the institution. The certificate will contain space for the name, birthplace, and date of birth of the father and mother, and other vital statistics, and the certified diploma will be presented to the mother upon leaving the hospital. A duplicate record of each diploma will be kept on file at the hospital.

Building Annex. An $80,000 annex to St. Elizabeth's Hospital, Hannibal, Mo., is under construction.